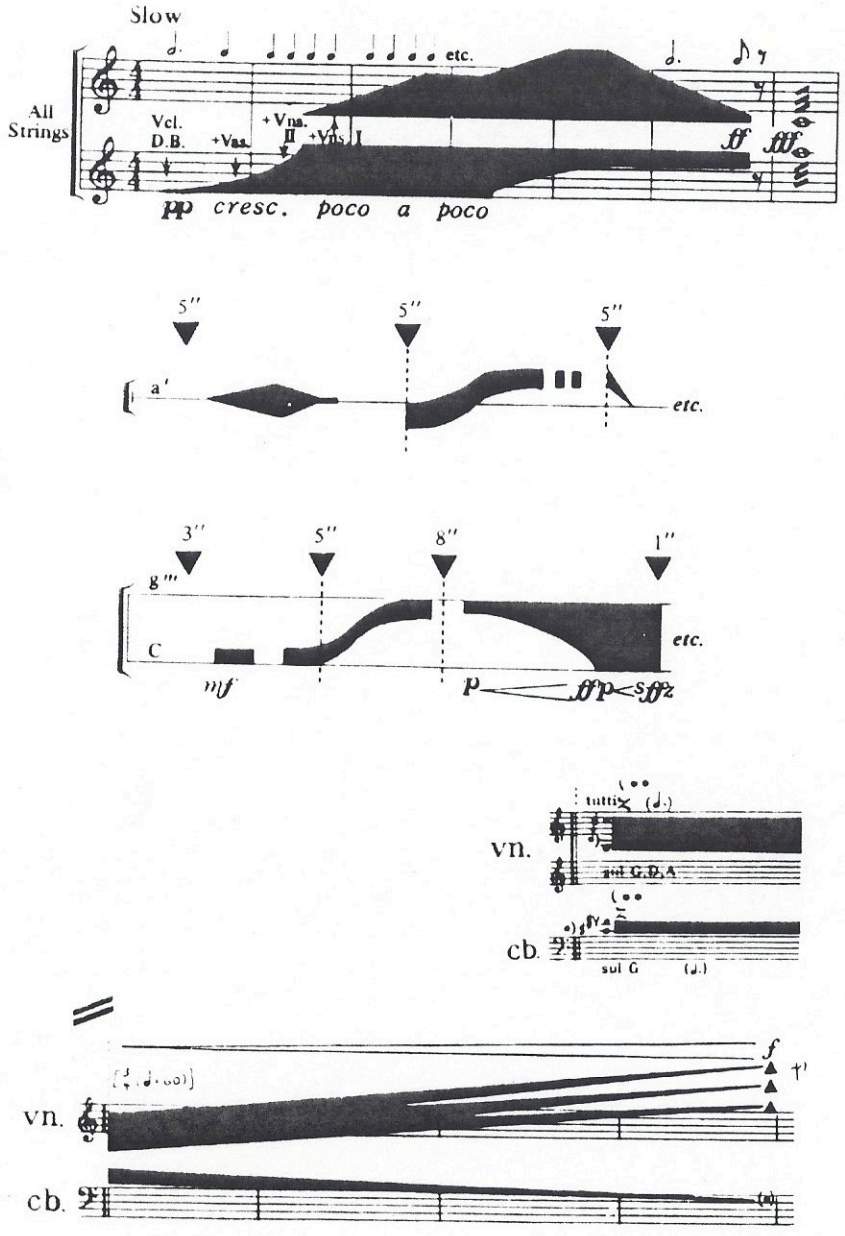
Allen, Stan. “Mapping the Unmappable: On Notation”.
Practice: Architecture, Technique and Representation.
London: Routledge, 2009



Cluster Band Notation.

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mapping the unmappable on notation

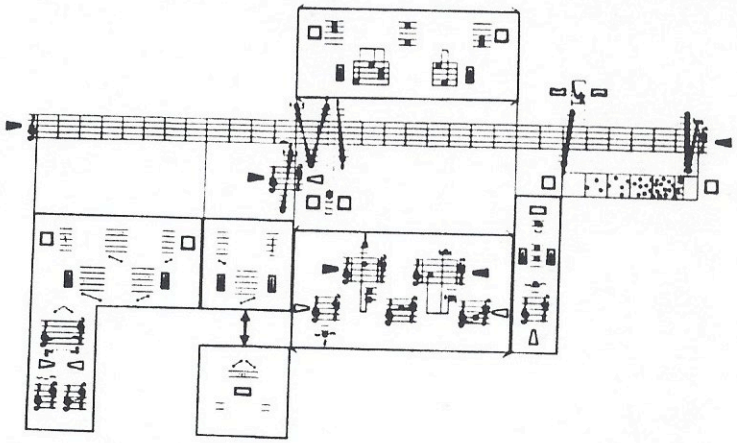
autographic vs. allographic practices

IN BOTH RECENT AND MORE DISTANT HISTORY, there have been those who claim that the sense of a work of architecture, like music or poetry, resides in the design rather than in the realized building.[1] The architect's intentions, they argue, are expressed in their most direct form through notation, set down once and for all in the abstract geometries of the drawing. In this view, architecture can only be diminished by the exigencies of construction, compromised by the complexity of realization and the unpredictability of reality. Others have argued that only the realized work has meaning, and that the drawings are irrelevant once the work is constructed. But these attempts to pin down representation always artificially fix the fluidity of drawing practice. The nominally conservative position that would look exclusively to the built work for affirmation of architecture's stability, and the "experimental" position that would locate architectural practice exclusively on the more slippery ground of representation, share a notion of drawing as pure abstraction, disconnected from reality.

I would argue instead that architectural drawing is in some basic way impure, and unclassifiable. Its link to the reality it designates is complex and changeable. Like traditional painting and sculpture, it carries a mimetic trace, a representational shadow, which is transposed (spatially, across scale), into the built artifact. Drawings are, to some degree, scaled-down pictures of buildings. But to think of drawings as pictures cannot account either for the instrumentality of architectural representation nor for its capacity to render abstract ideas concrete. Architectural drawings also work notationally, and can be compared to musical scores, texts or scripts. An architectural drawing is an assemblage of spatial and material notations that can be decoded, according to a series of shared conventions, in order to effect a transformation of reality at a distance from the author. The drawing as artifact is unimportant. It is rather a *set of instructions* for realizing another artifact.

Notations are necessarily reductive and abstract, yet the products of notation do not necessarily resemble the notation itself. Notations are "abstract machines" capable of producing new configurations out of given materials.[2] They work across gaps of time and space, but they are not universal. They work by means of *transposition* rather than *translation*. That is to say, notational diagrams are not "decoded" according to linguistic conventions, but rather their internal relationships are transposed: moved part by part into the new organizational context.[3] Each notational system articulates a specific interpretive community, a loosely bounded collective domain. The abstraction of notation is instrumental, and not an end in itself.

A consideration of drawing as notation also directs attention toward all of the intangible properties of the real that cannot be set down in graphic form. Many aspects of the experience of architecture can never be effectively simulated or predicted by representational drawing. As a thing in the world, architecture will always produce effects beyond those captured in its initial graphic descriptions. The limits of architectural drawing map out a paradox: we tend to think of building as the realm of tangible proof, and of drawing as the realm of ephemeral effects. Yet buildings are much less subject to control than drawings. In the experience of the real, a whole series of unpredictable and intangible effects can be produced: effects of light and shadow, reflections, shifting atmospheres, the movement of the spectator or the intricacies of peripheral vision. A representational drawing that tries to simulate those effects will always fall short, freezing, diminishing, and trivializing the complexity of



Karlheinz Stockhausen. *Zyklus*, 1959, Excerpt from the published score. © Universal Edition (London) Ltd., London 1960 © renewed All rights reserved Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian Agent for Universal Edition (London) Ltd., London.

the realized building. Paradoxically, the dry, unemotional form of notation, which makes no attempt to approach reality through resemblance, is better able to anticipate the complexity and unpredictability of the real. This is the realm of building that can only be addressed through notation, and which connects architecture to the most abstract arts: poetry and music. In the passage from drawing to building, the real and the virtual will always be present in some unpredictable mixture.

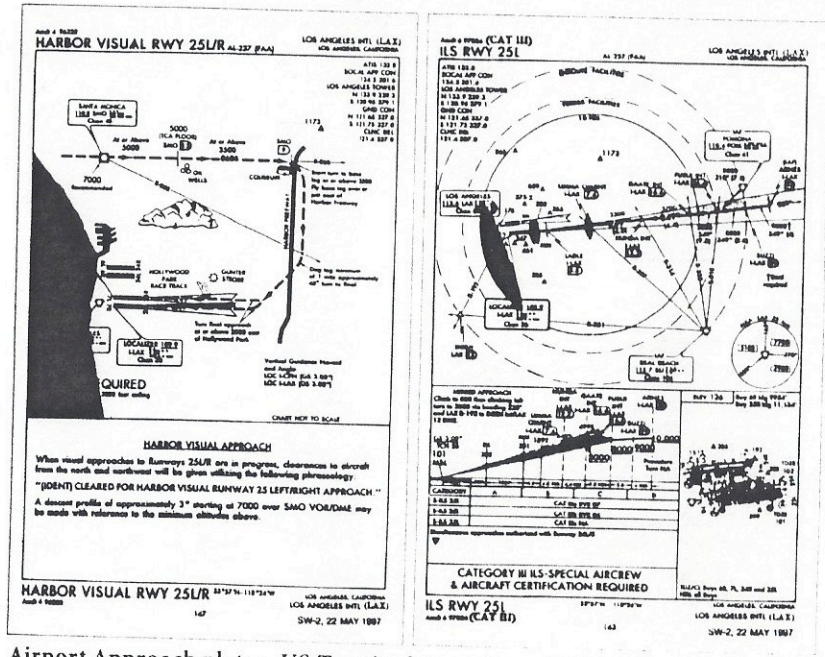
Philosopher Nelson Goodman has proposed a theoretical context within which this question can be given a more rigorous formulation.[4] In his extensive discussion of the question of notation, Goodman distinguishes broadly between two types of art forms. He calls *autographic* those arts, like painting and sculpture, that depend for their authenticity upon the direct contact of the author. In music, poetry or theater, on the other hand, the concept of authenticity is described differently. These arts, where the work exists in many copies and can be produced without the direct intervention of the author, he calls *allographic*. Allographic arts are those capable of being reproduced at a distance from the author by means of notation. In Goodman's account, despite different circumstances of performance, changes in interpretation or instrumentation, every performance of a musical composition, Franz Joseph Haydn's *London Symphony*, for example, counts as an authentic instance

of that work. The guarantee of that authenticity is not the (now obviously impossible) contact with the original author, but the internal structure of the work as set down in the score.

Allographic arts operate through interpretation and on the basis of convention. They are subject to changing standards of performance. The use of notation is the defining characteristic of the allographic arts: "an art seems to be allographic just insofar as it is amenable to notation."[5] Functionally, allographic arts depend upon notational practices as a consequence of the ephemerality of the work itself (poetry, or music), or the need to coordinate an intricate collaborative structure (dance, or symphonic music for example). In these artforms, the abstract schemas of representation precede the tangible form of the work. Allographic arts do not imitate or reproduce something already existing, they produce new realities, imagined by means of notation.

By these criteria, it is obvious that architecture is neither clearly allographic or autographic, and Goodman says as much: "The architect's papers are a curious mixture. The specifications are written in ordinary discursive verbal and numerical language. The renderings made to convey the appearance of the finished building are sketches."[6] Architecture, like music or dance, is not concerned with imitating reality.[7] The architectural plan and the musical score both describe yet-to-be-realized works; both score and plan vanish in the realized work. But unlike these ephemeral art forms, the built work of architecture is durable and physically present. And as a thing in the world, the meaning of a building is even more definitively disconnected from its author (and hence subject to the shifting contingencies of the real) than the work of a choreographer or musician. This paradox—Goodman's "curious mixture"—is fundamental to any discussion of architectural representation: how to understand a system that is at once highly abstract and self-referential, and at the same time has as its goal instrumental transformations of existing reality. Can Goodman's narrow description of notational systems be extended to encompass architecture's more complex situation?

Having called attention to the mixed character of architectural representation in general, Goodman goes on to stress the notational character of architectural plans specifically: "Thus although drawing often counts as sketch, and a measurement in numerals is a script, the particular selection of drawing and numerals in an architectural plan counts as a digital diagram and as a score."[8] Rather than understand the plan as a reduced picture, a scalar analog similar to a painter's



Airport Approach plates. ***US Terminal Procedures*****, 1997.**

sketch, Goodman emphasizes that architectural plans function as notation to the extent that they combine graphic information with measurements and specifications. Drawings become notations—diagrams—precisely at the moment at which numerical and textual information is added to the exclusively visual.

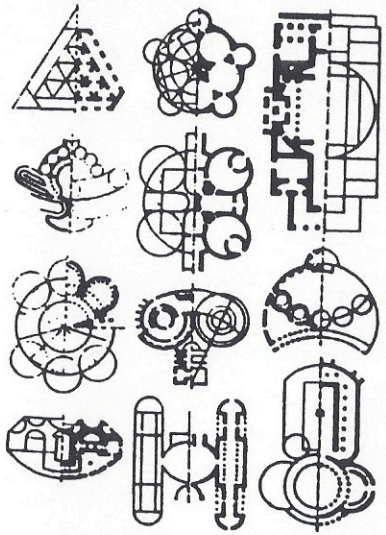
But the analogy breaks down when the individual work of architecture is considered. What Goodman calls the "compliance class" in architecture is traditionally a unique building. Further, it is also possible to point to the direct involvement of the architect in the process of construction as in some way analogous to the activity of the painter or sculptor. "The work of architecture," Goodman writes, "is not always as surely disengaged from a particular building as is a work of music from a particular performance. The end product of architecture, unlike that of music, is not ephemeral; and the notational language was developed in response rather to the need for participation of many hands in construction . . . insofar as its notational language has not yet acquired full authority to divorce the identity of the work in all cases from particular production, architecture is a *mixed and transitional case*."[9]

To elaborate the consequences of architecture's mixed status requires looking more closely at the interaction of the built and the drawn. How does the concreteness of reality temper the abstraction of drawing, and how does the

abstraction of architecture's instruments leave its mark on reality? Architectural drawings are neither an end in themselves (artifacts, like paintings), nor are they simply transparent technical instruments. The architectural drawing is *transitive* in nature, uniquely capable of producing something new from something else. Far from being ideal constructions, architectural drawings are marked by their contact with a messy and inconsistent reality. Representation is not something added onto building, but that which makes it possible in the first place. But technique is never neutral, and the means of representation always leave a trace on the construction. It is this continual shuttle between the abstraction of architecture's graphic instruments and the unyielding concreteness of the building that defines the work of the architect, and makes it possible for architecture to work within the complexity of the real, and to engage the shifting field of the contemporary city.

the illegible city[10]

The problem of architecture and the contemporary city is also in part a problem of representation, resulting from the substitution of the intangible for the tangible, and marking the inadequacy of the image as a descriptive mechanism. In "Reading the Illegible: Some Modern Representations of Urban Experience," critic Steven Marcus refers to the long literary history of urban description. He contrasts the description of the modern city as found in novels by Thomas Pynchon and Saul Bellow. Traditionally, as the city grows more complex, the novelist is still able to give a coherent account of the incoherent city. Like Dickens rendering the complexities of nineteenth-century London, Bellow's descriptions of New York or Chicago retain "meaning, impressiveness and coherence." But in the more recent fiction of Pynchon, the city ceases to be readable. The modern city, Marcus writes, "has gone out of control . . . it has lost the signifying potencies and structural coherences that it once seemed to possess." The text of the city—from the language of its inhabitants to the space of the street—can no longer be read in any coherent or predictable manner. Marcus quotes Pynchon to the effect that "In order to see the contemporary urban world clearly . . . we must be able to see past 'the fiction of continuity, the fiction of cause and effect, the fiction of humanized history endowed with 'reason''. The structural categories are, in these words, meaningless deceptions themselves. The whole has become again destabilized, obscure, baseless, mystified—and most efforts of



Planimetric diagrams of the architectuiral elements inserted into G.B. Piranesi's *Campo Marzio*, from Manfredo Tafuri, *The Sphere and the Labyrinth*, 1987.

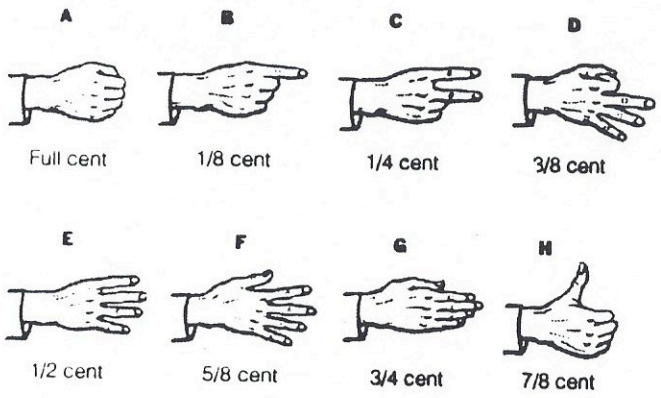
understanding or constructing a whole are themselves part of a mystification."[11]

Historically, the architecture of the city embodied collective memory through a structure of finite definition. A close correspondence was maintained between the city as a tangible site on the landscape and a series of representations based on a fixed point of view and static conventions of representation. Today the technologies of communication, information exchange, and war, along with the economies of multinational capitalism and global commodity exchange, have produced a condition in which the urban site is no longer simply geographic. The local, physical difference of cities, from the first world to the third world, is being progressively erased with the exchange of information, knowledge and technique. All cities today are instantaneously connected as part of vast networks, in which images, data and money flow freely. And if the advent of mass communication and information technology has undermined the idea of the city as the place of architectural permanence, the social value of memory itself has been eroded by the series of catastrophic political events that have marked the twentieth century.

The technology of war has further undermined the residual notion of the city as a protective enclosure. The fracturing and disintegration of the city that

Fractions of a Cent

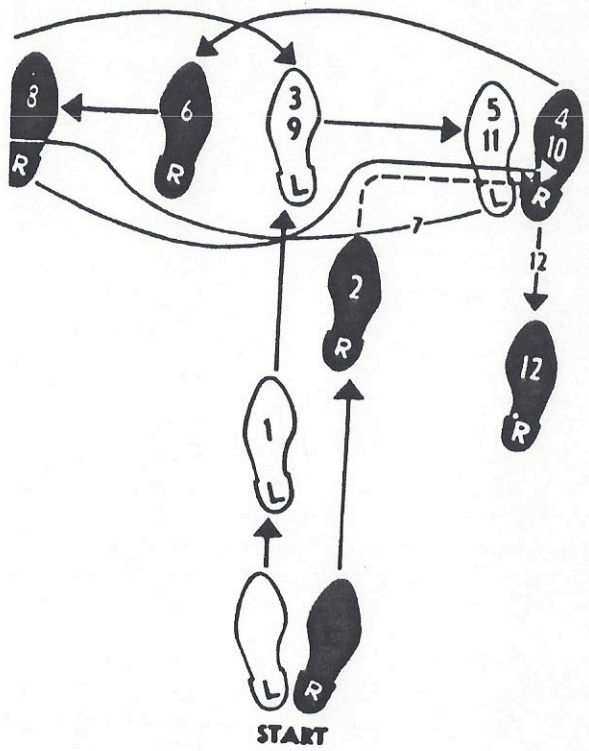
Here are the values assigned to the hand signals used by traders at the Chicago Board of Trade.



Chicago Board of Trade. Hand signals for trading.

began with the perfection of ballistics and the development of roads and railways in the nineteenth century has been greatly accelerated by the defense requirements of the nuclear age and its supporting technologies. As the only means of defense, dispersion has become the primary tenet of an antiurban ideology causing further erosion in the public realm.[12] As Paul Virilio has pointed out, "the representation of the contemporary city is no longer determined by a ceremonial opening of gates, by a ritual of processions and parades, nor by a succession of streets and avenues. From now on architecture must deal with the advent of a 'technological space-time.'"[13]

One consequence of this has been the marginalization of the discipline of architecture itself. Michel Foucault has noted that "Architects are not the engineers or technicians of the three great variables: territory, communication and speed."[14] Architects seem condemned to work on the surface of the city and not its structure. This is a situation that is historically determined and unlikely to change significantly as a result of anything that the architectural profession does. But it can also be argued that architects have yet to examine the consequences of this shift. If architecture has lost its historic capacity to fix and determine the limits of urban space and territory, are architects left to work exclusively with images? Or is it possible to accept the reality of this new condition, and to creatively reinvent the tools of the discipline in order to meet these new challenges?



Andy Warhol. *Dance Diagram*, 1962.

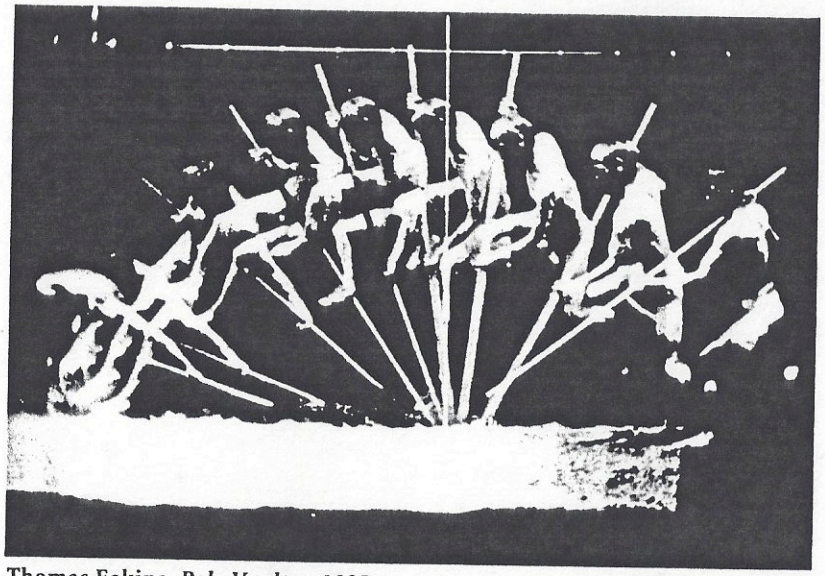
In the rhetoric of the early modern movement, technology was represented in symbolic form. The ocean liner, the airplane, or the dynamo acquired ideological value as icons of modernity. Frederic Jameson has remarked that contemporary technology does not lend itself to iconic representation.[15] But today the artifacts, the new machines, are uninteresting in themselves. More important for the city are the effects of technology: the atomization of information, the splintering of perspectives, the uncontrollable proliferation of "depthless" images. Jameson's call for new "cognitive maps" and his reference to the studies of Kevin Lynch on the image of the city are suggestive, but the most significant new effects in the city are not registered as images. New urban phenomena—so called "edge cities," or "generic cities"—are the consequence of technological and social changes but they reflect those changes only in the most indirect and mediated form. In order to map this unmappable territory, the conventions of representation itself need to be rethought. If architecture is to work beyond the level of image it needs to invent

new tools to work more effectively within the immaterial networks and systems that comprise the city in the late twentieth century. In order to sustain its own relevance, architecture needs to address the social and political implications of the shift from artifact to effect.

Traditional representations presume stable objects and fixed subjects. But the contemporary city is not reducible to an artifact. The city today is a place where visible and invisible streams of information, capital and subjects interact in complex formations. They form a dispersed field, a network of flows. In order to describe or to intervene in this new field architects need representational techniques that engage time and change, shifting scales, mobile points of view, and multiple programs. In order to map this complexity, some measure of control may have to be relinquished.

To propose a new attentiveness to notation in architectural representation is not to propose another paradigm shift—a simple substitution of one way of working for another—but rather a proposal to enlarge the catalogue of techniques available to the architect working in the city. Even the most conventional architects work notationally to some degree. To further open architectural representation to the score, the map, the diagram and the script could establish a basis for exchange with other disciplines such as film, music and performance.[16] The score allows for the simultaneous presentation and interplay of information in diverse scales, on shifting coordinates and even of differing linguistic codes. The script allows the designer to engage program, event, and time on specifically architectural terms. New maps and diagrams might begin to suggest new ways of working with the complex dynamics of the contemporary city.

Hence a pragmatic program is outlined here: to radicalize the already present and highly specific capacity of architectural drawings to work on reality from a distance; to be highly specific in a material sense and at the same time to engage the invisible or to activate the virtual; to work simultaneously with the abstract and the concrete; to begin to use notation's capacities not only to take the measure of the already existing complexity of the new urban field, but also to develop strategies to intervene productively in the city today with proposals that are open and optimistic, devoted to affirmative change rather than commentary or critique.



Thomas Eakins. *Pole Vault*, c. 1885.

glossary: working definitions

anticipation

Notations always describe a work that is yet to be realized. Even if already performed, the work it describes is open to interpretation and change in the course of future performance. In this sense, notation is optimistic and anticipatory. Unlike classical theories of mimeses, notations do not map or represent already existing objects or systems but anticipate new organizations and specify yet to be realized relationships. Notation is not about interrogation, critique or commentary. These "critical" practices utilize notation's discursive capacities only in retrospect (pointing out what is wrong with existing reality), whereas notation's more radical possibility lies in the possibility of proposing alternative realities. Notation's special properties can be exploited by the urban designer to produce a kind of "directed indeterminacy": proposals that are robust and specific enough to sustain change over time, yet open enough to support multiple interpretations.

invisible

Notations go beyond the visible to engage the invisible aspects of architecture. This includes the phenomenological effects of light, shadow, and transparency; sound, smell, heat, or cold, but also—and perhaps more significantly—program, event, and social space. Notations are not pictures or icons. They do not so much describe or represent specific objects, as they specify internal structure and relationships among the parts. In as much as the use of notation signals a shift away from the object and toward the syntactic it might open up the possibility of a rigorous, yet nonreductive abstraction. The use of notation marks a shift from demarcated object to extended field.

time

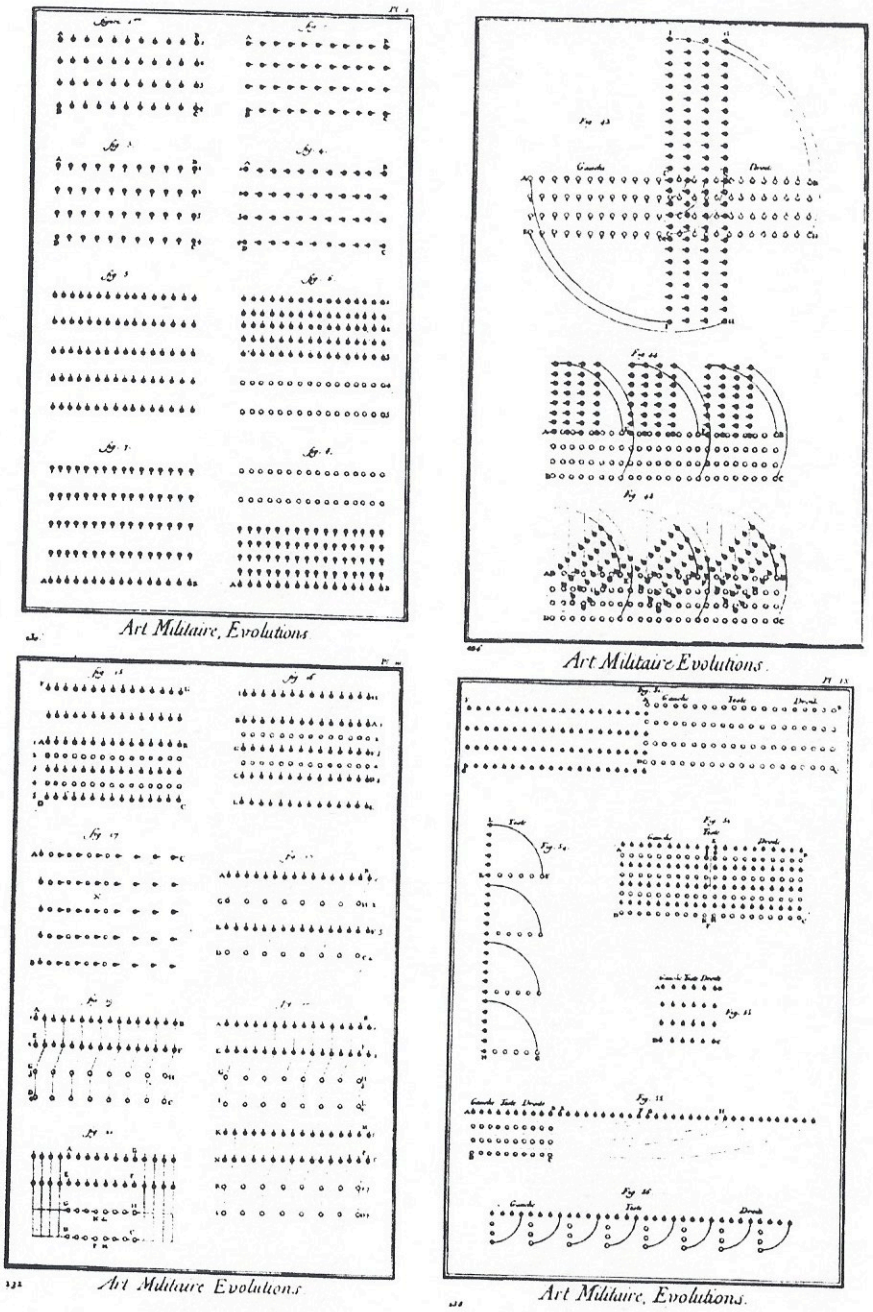
Notations include time as a variable. It is not accidental that notations figure most significantly in the arts that unfold in time: music, dance, or theater. If we allow, along with Paul Virilio, that the life of the city and its experience today belongs more to time than to space ("Now speed—ubiquity, instantaneousness—dissolves the city, or rather displaces it, in time."[17]), the special capacity of notation to make thematic the measurement and unfolding of time takes on a special importance. Interval, duration, and tempo, acceleration and accumulation are the key variables in a notational schema.

collective

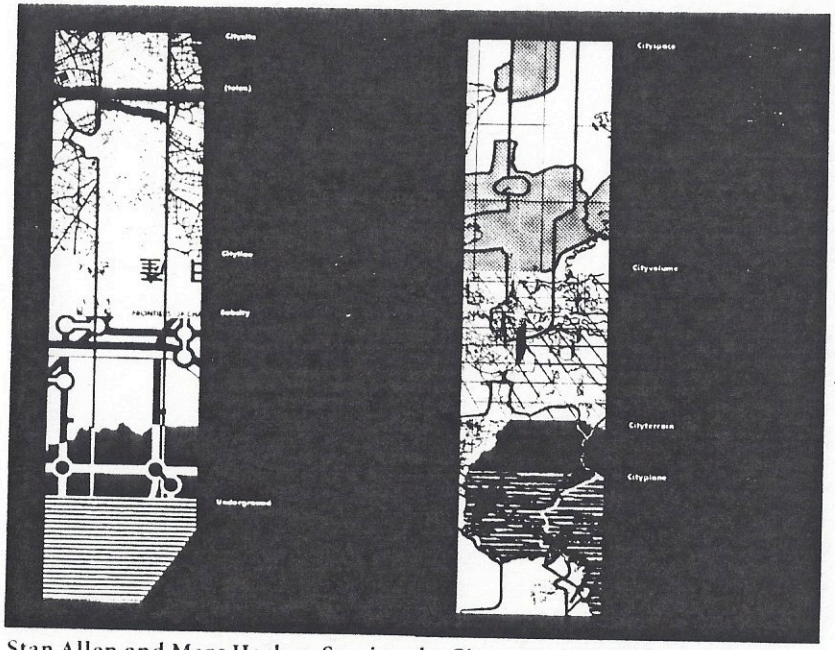
Notations presume a social context, and shared conventions of interpretation. The score is not a work itself, but a set of instructions for performing a work. A score cannot be a private language. It works instrumentally to coordinate the actions of multiple performers who collectively produce the work as event. As a model for operating in the city, the collective character of notation is highly suggestive. Going beyond transgression and cross-programming, notations could function to map the complex and indeterminate theater of everyday life in the city. The use of notation marks a shift from the *production of space* to the *performance of space.*

digital diagrams

Notations work digitally. To say this is not to suggest any specific relation to computer technology, but rather to return to a precise definition of the digital: "A digital scheme . . . is discontinuous throughout; and in a digital system the char-



Denis Diderot. Military Formations, from *The Encyclopedia*, 1762–1777.



Stan Allen and Marc Hacker. *Scoring the City*, 1986 (details).

acters of such a scheme are one-to-one correlated with a compliance-class of a similar discontinuous set." Notations work through difference, not resemblance. If the new technology is understood as a shift from machines of production to machines of reproduction, and if this shift is characterized by the replacement of the analog by the digital, a corresponding shift toward notation in architectural practice might follow. To cite Goodman again, "The more we are startled by this, because we think of such diagrams as rather schematized pictures, the more strongly we are reminded that the significant distinction between the digital or notational and the non-notational, including the analog, turns not upon some loose notion of analogy or resemblance but upon the grounded technical requirements for a notational language."[18]

Some caution is necessary at the end. To appeal to notational systems in urbanism is not to suggest a return to perfect transparency of meaning and the smooth implementation of functionality. Fully aware of the dangers of mystification and false totalities, these proposals do not set out to impose coherence on an otherwise incoherent city, or to regulate meaning or behavior. Rather, they propose an open-ended series of strategies to use within the indeterminate field of the contemporary city. They propose new scenarios, provoke unanticipated

combinations and allow incremental adjustment over time. They leave space for the tactical improvisation of the user in the field. Whatever coherence is attained is always a provisional stabilization of the mobile forces of the city, not set down in advance, but developed in practice.

theory's consequences

Perhaps at this juncture it is important to insist that the problem of representation in architecture is always double. It is important to distinguish carefully between the *techniques* of representation—mapping, projection, or notation—and the idea that *architecture itself* operates as a representational system. These two aspects are linked, but are not identical, and a great deal of confusion arises out of the failure to pay close attention to the difference. As Jacques Derrida has put it, "In the architectural work the representation is not structurally representational—or it is, but according to a detour so complicated that it would undoubtedly disconcert anyone who wanted to distinguish, in a critical manner, the inside from the outside, the integral from the detachable."[19] Diana Agrest and Mario Gandelsonas have cogently remarked on the *inevitability* of architecture, as a social system, behaving to some degree like language, and on the other hand, the *impossibility* of architecture ever approaching the fluidity and transparency of discursive language.[20] It may well be that the "crisis of representation" in the contemporary city is nothing more than an escalation of an already present conflict in representation—a deep, always present conflict in language and representation brought to crisis in the context of new technologies and urban conditions. But architecture's response to that crisis, under the influence of deconstructionist theory—which has been to register the instability of the system through *representations* of instability—seems inadequate.

One conclusion that we might legitimately draw from the deconstructionist project is that the dream of a perfect fit between object and its representation needs to be given up. Doubt and indeterminacy may have to be accepted as the everyday working material of the architect. Accepting the impossibility of a diaphanous communication between architect and public, a turn to the somewhat crude instrumentality of notation may in fact be reasonable. Theory acts to provoke doubt, but once that doubt has been registered,the challenge of the present is to make do with this corrupt and imperfect material.

1989/1997