

CARTO- CITY

Urban space and cartographic space are inseparable. This is the case historically, practically and conceptually. Urban origins, at Ur or Sumer for example, are revealed through the mapped reconstruction of their street geometry and building plot plans.¹ Elevation is the least durable element of urban form; horizontal plan the longest lasting. Urban archaeology reconstructs urban places through peeling back successive surfaces, like the pages of an historical atlas, and mapping the stratigraphy of material deposits stretched across former urban space. From such material mappings we reconstruct not only its physical appearance but also the city's social, political, commercial and religious life.

Practically, confrontation with an unfamiliar city is typically mediated by the map: of transit routes, of streets, of tourist destinations. Urban experience in a new city is often a process of negotiating the divergence between cartographic and material spaces. In cities with complex underground rail systems such as Tokyo, London or Paris, it can take years before the point pattern of stations familiar from the subway map is fully coordinated with the surface experience of townscape. In great metropoli, possession and use of a standard street directory such as London's pocket *A-Z* guide or Los Angeles' *Thomas Guide* are signs of citizenship.² They have become cartographic icons of the cities whose streets and addresses they designate. Much more than functional instruments, aids to fixing destinations or following routes, they are bearers of urban meaning and character: the map becomes to some degree the territory.

Conceptually, the map has either preceded the physical presence of the city or served to regulate and coordinate its continued existence. St. Petersburg, Washington D.C., New Delhi, Brasilia, countless fortress and colonial cities, existed on paper before they had any material expression. Paris, Rome, Vienna, Amsterdam, Jerusalem — virtually every great city — either has been reconstructed or expanded by means of a drawn plan.³ And beyond the physical extension or reconstruction of urban space, the map has both recorded and determined countless aspects of urban life and citizenship. Maps of disease and morbidity, for example the cholera cartography of Victorian London or Philadelphia, helped make the modern metropolis a survivable space in the face of those viruses and bacteria that thrive on human density. Maps of social and ethnic status have shaped the political life of urban democracies, nowhere more dramatically than in the case of 20th-Century American zoning maps, used by housing and loan companies for red-lining inner-city ghettos and later by government agencies to assert civil rights. In every way, the map registers the city as a distinct place and a unique landscape. Cartography acts not merely to record the various ways that the city is materially present, but as a creative intervention in urban space, shaping both the physical city and the urban life experienced and performed there.⁴

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1. Adam T. Smith, *The Political Landscape: Constellations of Authority in Early Complex Polities*, University of California Press, 2003.
2. Appropriately, London's *Geographers A-Z* guide can be held in the hand and carried in the pocket. Los Angeles' *Thomas Guide*, by contrast, is designed to sit on the passenger seat of a car.
3. Most histories of urban form are illustrated with maps and plans but rarely explore critically the precise relations between these images and the built form of cities. See for example Richard Sennett, *Flesh and Stone: The Body and Civilization in Western Civilization*, Faber, 1994; Joseph Rykwert, *The Seduction of Place: The City in the Twenty-First Century*, Pantheon, 2000.
4. For historical examples, see Ola Söderström, "Paper Cities: Visual Thinking in Urban Planning," *Ecumene*, 3, 1996, 249–281. For a more contemporary discussion of the processes of negotiating urban space planning through maps see Ola Söderström, Elena Cogato Lanza, Roderick J. Lawrence & Gilles Barby, *L'Usage du projet*, Editions Payot, Lausanne, 2000.

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Never innocent guides, city maps have always shaped the experience of urban space, serving both as scientific instruments and aesthetic representations of the city.

Mapping
Carto-City

Denis Cosgrove

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Denis Cosgrove traces the history of urban cartography and its techniques, from the grid to the aerial perspective to contemporary digital mapping technologies.

The ubiquity of cartography as a dimension of urban life and form makes a comprehensive survey of their relations impossible. I focus here on ways that the urban map is positioned between creating and recording the city. It is this dual function that releases the imaginative energy of mapping, and which has consistently attracted the attention of artists as well as technicians to urban mapping. From the vast archive of urban maps, plans and artistic interventions into urban mapping, I have chosen here to explore how the modern city as material and social space interacts with the map as scientific instrument and artistic representation of its space and life.

The complexity of the interaction is dramatically apparent in a post-modern American city such as Los Angeles, Houston or Phoenix. These are perhaps the most intensively mapped spaces in the history and geography of the planet: every square meter is geo-coded by government and private or commercial agencies for purposes ranging from environmental protection, public health and safety, efficient transportation and taxation to property insurance, marketing, political persuasion and religious evangelism.⁵ Maps have played a critical role in shaping their physical spaces and land uses, and continue to control the daily lives of citizens through zoning ordinances, zip codes and the myriad territorial regulations that shape urban daily life. Theoretically, scientific cartography should make these cities highly rational, coherent spaces. Indeed, flying over a city such as Houston, a cartographic order is immediately visible in the repetitive grid of major streets, and within this the curvilinear geometry of residential roads and house lots, or in the rectangularity of office, production, storage/distribution and retail spaces. Yet, on the ground, such cities are among the least legible places on earth. Moving across their surfaces, an individual familiar with the spatial sorting of land uses and the hierarchy of distinctive symbolic structures that characterize conventional urban space is confused, even assaulted, by the seemingly random scatter and apparent chaos of urban elements. The post-modern urban landscape seems to confirm the problem of legibility in the constant and competitive presence within it of words, phrases and whole texts: billboards, street signs and posted ordinances.⁶ The volume of written language in the public spaces of contemporary urbanism far exceeds that in more traditional cities. Image and text, whose effective harmonizing is cartography's signal contribution to spatial representation, has become disjointed, and their falling apart denotes the erosion of a relationship that underpinned urban modernity.⁷

This does not mean a reduction in the map's role in urban place making and experience. Indeed, a characteristic way of negotiating movement within the post-modern American city is the computer-generated map, custom produced for any destination address, from any point of departure within the United States.

5. On Los Angeles for example, see Greg Hise, *Magnetic Los Angeles: Planning the Twentieth Century Metropolis*, The Johns Hopkins University Press, 1997, and *idem* & William Deverell, *Eden by Design: the 1930s Olmsted-Bartholomew Plan for the Greater Los Angeles Region*, University of California Press, 2000.

6. The classic texts on post-modern urban landscape include Edward Relph, *The Modern Urban Landscape*, Johns Hopkins, 1987; David Harvey, *The Condition of Postmodernity: An Enquiry Into the Origins of Cultural Change*, Blackwell, 1989; Edward Soja, *Thirdspace: Journeys to Los Angeles and Other Real-And-Imagined Places*, Blackwell, 1996; *idem*, *Postmetropolis: Critical Studies of Cities and Regions*, Blackwell, 2000.

7. Despite the graphic sophistication of iconic communication in the contemporary city, the volume of text in the public landscape seems to increase with the number of enterprises competing for the attention of highly mobile, car-borne public. This is very noticeable in the U.S. where neon and other forms of illuminated text are characteristic features of urban space. On the role of text in regulating urban legibility in the past, see R.M. San Juan, *Home: A City Out of Print*, University of Minnesota Press, 2001. We should also recall the significant role traditionally given to public maps in countries such as Italy where they have frequently been carved onto the facades of public buildings.

Map Quest© can create an instant digital image of any urban location at any requisite scale using a simplified set of standard colors and cartographic signs. Such images are resolutely functional, entirely ignoring the context of the places they represent, utterly unconcerned with *civitas* or the city as public space. No urban map could be further removed from an image such as Jacopo de' Barbari's *Venetia* map of 1500. The paradigm example of early-modern city mapping, Jacopo's detailed townscape guided the observer not to a physical destination but to the civic spirit of Europe's greatest commercial city.⁸

"Scientific" cartography's inability to capture the contemporary city has, however, opened new possibilities for urban mapping. As I shall illustrate, these have been colonized creatively for a wide variety of projects: conceptual, political, and purely ludic, breathing new life into the connections between city space, city life and mapping.

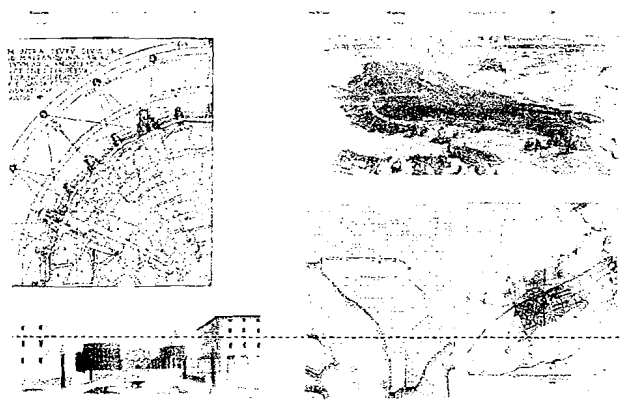
RADIAL AXIS AND THE GRID

Geometry, specifically the radial axis and the grid, underpinned scientific cartography and modern urban form. Their power and historical endurance in both the map and the city lies in their combined practical and symbolic efficacy. The circle's 360 degrees generate a center-enhancing axial form focused on a single point. Functionally and symbolically, this extends power panoptically to the horizon, encompassing a potentially infinite territory. Versailles, Karlsruhe, Baroque Rome and Second Empire Paris have all inscribed this simple geometry into urban space. The same axial pattern emerges from the simplest mapping technique: taking radial sightlines from a single point. Multiple survey points can be selected randomly along a pathway or be connected to a cardinal base line. Back sighting confirms positional accuracy, producing a network of intersecting axes such as the wind-related rhumb lines on a marine chart. The magnetic compass connects these sightings to global and even cosmic geometry. The radial planning of a city is at once practical and symbolic, as Vitruvius recognized in his description of the city perfectly oriented in respect of wind directions. The first record in the West of systematic urban mapping was Vitruvius' first popularizer, Leon Battista Alberti, in a description of Rome. No actual map exists for this project, merely a set of coordinates produced by Alberti for known locations along axes converging on a single point of observation.⁹

The alternative geometrical form shared by urban plan and mapping is the grid or checkerboard of orthogonal lines crossing at right angles. While radial axes enhance the center, the grid is space equalizing, infinitely extendable over the surface and privileging no single point, but reducing each to a unique coordinate. The grid generates the simplest and most ubiquitous form of urban plan. It is found in the earliest Greek colonies in the Mediterranean, in the design of imperial Chinese

J. Schultz, "Jacopo de' Barbari's view of Venice: map making, city views and moralized geography before the year 1500." *Art Bulletin*, 60, 1978.

One of the principal advantages of the coordinate system for mapping is that it allows for greater mobility of the map than a purely pictorial outline and plot. Obviously, errors of transcription can occur in both forms, but the transmission of tables of figures from which a map may be constructed allows for much greater accuracy of positioning than merely copying lines and points by eye.



Territory maps

10. See the fashion of the spatial re: Casey, *Re: Landscape* University 2002, pp. 11. V. Hart & Palaces: 7 Architect University

cities, in Spanish New World pueblos, in the urban settlement of the U.S. The colonial urban form *par excellence*, the grid can also be an expression of urban democracy, equalizing lot sizes and maximizing the ease of platting and disposing of urban land into private property. As William Penn's Philadelphia design reveals, the grid can easily be elaborated to generate open spaces—squares—to interrupt its monotony and produce public space within an otherwise privatized space.

The grid performs a similar function in mapping. Introduced into modern Western cartography in the early 15th Century through Claudius Ptolemy's Geography, but known to Chinese cartographers at least 300 years earlier, the introduction of a graticule of longitude and latitude lines as the basis for determining location and translating the sphere to a two-dimensional map is by far the most significant feature of modern cartography.¹⁰ The grid is a ubiquitous location-fixing device. Unrelated to planetary coordinates, the grid can be stretched across any spatial scale, as the British Ordnance Survey's national grid or the lettered and numbered squares superimposed on countless urban maps demonstrate.

These shared geometries of urban design and cartography are instrumentally effective and symbolically significant. They are conceptually easy to grasp and relatively simple to apply in spatial design and representation. Neither is restricted to a single scale but may be applied from microcosm to macrocosm. Thus, each possesses not only specific symbolic attributes—power and panopticism, reason and democracy, respectively—but also a common capacity to connect mundane space to the cosmic patterns, movements and logic. They therefore propose and permit urban mapping as a philosophical exercise.

The philosophy and ethics of the urban map are apparent across the history of modern urbanism. The profound impact of Vitruvius' urban plan in Renaissance Europe derives from its appeal to humanists and scientists engaged in rethinking both the nature of urban life and the mapping of global space. The ideal city debate among architectural writers from Alberti and Francesco di Giorgio Martini to Sebastiano Serlio and Vincenzo Scamozzi concerned more than the formal design of urban space. It was about mapping urban life and of citizenship.¹¹ The city, represented in the anonymous image now in Baltimore, represents much more than a symmetrical grid of buildings, streets and open spaces rendered in deep perspective. It maps an image of citizenship derived from Republican Rome and the Stoic writings of Cicero, Seneca and Marcus Aurelius. The civic virtues of Justice, Prudence, Temperance and Fortitude stand atop the four columns that define its central square. The buildings gathered around that space correspond to the public functions that regulate urban life. And across the foreground of the image creeps the bent and burdened, but immensely dignified figure of the Stoic. Acknowledging the cosmic order mapped into urban space, and subordinating body to mind, he signifies the good citizen's duties of reason, reverence and sociability. The map of urban space is also the map of urban virtue.

See the fascinating discussion of the grid as a mode of spatial representation in E. Casey, *Representing Place: Landscape Painting and Maps*, University of Minnesota Press, 2002, pp. 199–215.

Hart & P. Hicks, *Paper Places: The Rise of the Architectural Treatise*, Yale University Press, 1998.

Axial and grid geometries were united in the service of Modernity's grandest social project: the creation of the U.S., notably for this discussion in the design of America's federal capital. Charles L'Enfant's map combined the democratic principles of the U.S. Constitution and Bill of Rights in its checkerboard of residential streets, with the inscription of federal authority through axes radiating from the separate seats of executive and legislative power. An earlier proposal by the federalist Thomas Jefferson had envisioned the city as a simple grid similar to that which his Committee on the Disposal of Western Lands proposed for rural America: to ensure individual liberty through a self-governing, property-owning democracy. It is tempting to see the Frenchman's incorporation of axiality into the Washington D. C. scheme as the superimposition of a more continental vision of liberty secured through the authority of the state, a view much more congenial to Jefferson's great rival, Alexander Hamilton. Whatever truth there may be in such speculation, the realized plan generated fifteen public open spaces, one for each state of the union at the time of the city's foundation. Universal principles embodied in the new republic were thus mapped into its capital.¹²

GEOMETRY, THE MAP AND URBAN LEGIBILITY

Early modern and Enlightenment city planning saw in geometry a medium of legibility. The city was to be read as a text for its rulers, its citizens and its visitors. Printed urban maps expressed and reinforced the city's legibility. These were not initially intended primarily as location markers or way-finding instruments, except for a small number of guide book maps such as those describing the monuments and pilgrimage sites of Rome. The earliest urban maps are overwhelmingly celebratory, intended to frame in a comprehensive image the city's complex social and spatial totality. Such maps form a distinct genre by the 16th Century, emerging in Europe's most heavily urbanized, mercantile regions: upper Italy, Southern Germany and Flanders. Italian urban maps such as Leonardo da Vinci's map of Imola adopted an orthographic perspective, or the high angle, bird's eye view apparent in Jacopo's Venice. Northern maps were more commonly townscape views, graphing the urban skyline in silhouette along a horizontal perspective.¹³ While the former universalized the city by representing it according to a standard set of geometrical rules and surveying principles, the latter particularized the city through the unique elements of its skyline: cathedral, guildhall, parish churches. By mid century the distinction was fading. Nicholas Crane captures the impact of changes in urban mapping by describing the cartographer Mercator's reaction to Hieronymous Cock's 1557 view of Antwerp:

As long as Mercator could remember, Antwerp had been pictured from the water, as a bustling, dishevelled river port. Cock's viewpoint was high above the opposite side of the city. Antwerp had become a disciplined urban network of streets and civic symbols surrounded by massive geometric defenses. Wagons entered landward gates, bound for fleets of patient ships on a distant, placid Schelde. Cock's Antwerp was a celebration of mercantile might, and a working diagram of a modern city.¹⁴

2. M. Tafuri, *Architecture and Utopia: Design and Capitalist Development*, MIT Press, 1976.

3. L. Nuti, "Mapping Places: Chorography and Vision in the Renaissance," in D. Cosgrove ed., *Mappings*, Reaktion, 1999, pp. 90-108.

4. N. Crane, *Mercator: The Man Who Mapped The Planet*, Phoenix, 2003, p. 188.

15. Kirsten and Ha Sixteen *Imago I* pp. 34-

16. Braun, *Civitate Nuremi*

The paradigmatic early modern urban mapping project was the multi-volume urban atlas, *Civitates Orbis Terrarum*, edited by Georg Braun and Frans Hogenberg from 1580. Intended to illustrate every major city in the world according to a standard, printed cartographic format, it was conceived in response to Abraham Ortelius' first systematic world atlas of 1570. Earlier encyclopaedias and cosmographies had illustrated cities, but while some places were well served by recognizable images — Constantinople, Rome, Paris and Venice for example — many of the named cities in Hartmann Schedel's *Chronical* (1493) or Sebastian Münster's *Cosmographia* (1544) had been pictured by generic townscape images. Braun and Hogenberg gathered printed city maps from local sources to ensure the most accurate and up-to-date image of the city, allowing the atlas owner to survey the civilized globe of urban places within the privacy of a study or reading room. While some images adopted the urban silhouette, the favored perspective was the bird's eye view, exemplified perfectly in the maps of Cologne or Amsterdam. The city is seen from an elevated point far above and beyond its confines, at an angle sufficient to reveal both its pattern of streets, squares and open spaces and the elevation of its principal buildings and monuments. Distant, to be sure, yet close enough for the rhythm of its life to be pictured in the pedestrians, carriages, wagons and ships moving on its roads and waterways, the city is immediately legible as a coherent community.

Braun and Hogenberg's emphasis on unity and civic order is reinforced by decorating their maps with the coat of arms of the city and of its great families or principal guilds. Cartouches and printed text further reinforce the message, that each city is honored by the depth of its history, the nobility of its citizens, the wealth of its merchants, the beauty of its buildings. The map is synthetic rather than analytic; its goal is celebration rather than analysis or critique. This is true even of the two New World city maps included in the collection: the Aztec capital Tenochtitlan and the Inca city of Cuzco. The former map, based on Cortez's own map, illustrates the very antithesis of civilization in the Classical sense of civic virtue lived out in urban space. It is dominated by its central square and great ziggurat, upon which human sacrifices are being performed. Cartographic parallels between the island cities of Tenochtitlan and Venice reinforced the Aztec capital as "Other" to Europe's self-proclaimed model of civic perfection, yet Braun and Hogenberg's urban mapping principles subordinate difference to stylistic consistency.¹⁵

LEGIBILITY, IMPROVEMENT AND CONTROL

The decorative, celebratory style of urban mapping exemplified by *Civitates Orbis Terrarum* dominated European urban mapping into the 18th Century.¹⁶ Urban plans projecting newly founded cities or urban expansion adopted a more severe, undecorated style as part of their rhetoric of practicality. This is apparent in Vincenzo Scamozzi's 1599 plan for the Venetian fortress-city of Palmanova, in John Evelyn's 1666 plan for rebuilding fire-damaged London, and in the 1703 plans for St. Petersburg. Their draughtmanship provided the model for the scientific urban maps of the Enlightenment such as Michel Etienne Turgot's 1739

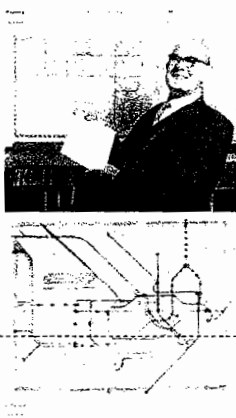
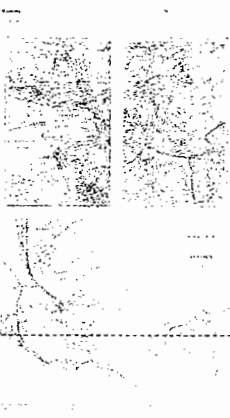
Kirsten A. Seaver, "Norumbega and Harmonia Mundi in Sixteenth-Century Cartography," *Imago Mundi*, 50, 1998, pp. 34–58.
<http://www.colour.com>
 Braun, W. and Hogenberg F., *Civitates orbis terrarum*. Nuremberg, 1580–1617

Plan de Paris. Urban legibility becomes the overarching goal of city mapping, to be achieved through precisely measured survey using carefully calibrated instruments. The undecorated simplicity of 18th-Century graphic design articulates goals of cartographic accuracy and objectivity by erasing evidence of human intervention between survey instrument and printed image.¹⁷ The severely constrained outline of carefully surveyed streets, open spaces, building plots and footprints, together with monochrome printing from fine-line copper engraving or later lithography, together with an absence of decorative embellishment, all signify new ways of thinking about the city and about urban life. The traditional vision of the city as a self-governing polis or a Christian community had underpinned cartographic emphasis on civic harmony, community and dignity within a unified urban space. This vision was being eroded by modern secularism and individualism, and by urban population growth and spatial expansion, industrial production, and new forms of social cleavage and solidarity. In response, the city was reconceived; new ways of imagining and experiencing urban life were reflected in maps whose intent is analytic rather than synthetic.

By the mid-19th Century, plain-style urban plans had become the base maps for the emerging science of urban statistics, by which expanding state capitals and new industrial cities were to be regulated. Cholera and typhoid, poverty and prostitution, alcohol consumption and criminal deviance — all regarded as primarily urban ills — came to be understood through the medium of the urban map.¹⁸ The accuracy of the base map was fundamental to the persuasive power of the statistical information plotted onto it. Rather than celebrating the unity and harmony of urban community, the map's task was to bring into the light of practical reason invisible but all-too-potent urban pathologies. Their amelioration often involved further mapping of urban space: clearing and replanning crowded districts, laying water supply and drainage systems, platting new suburbs, cemeteries and park lands.

The celebratory aspect of the urban map did not entirely disappear. In the United States, for example, it gained a new lease on life in mid-19th Century county atlases lauding Western expansion. The bird's eye perspective was perfect for demonstrating the elegance and prosperity of newly established and often scarcely built towns. Emphasizing their grid of streets and the bustle of carriages and carts, the maps promoted often chaotic and violent places as well-ordered civic communities. They contrast strongly with American fire-insurance maps from the same years whose functional goal of assessing risk and determining premiums is apparent in the severity of unembellished detail, coding such data as street width, building height and constructional materials, or the proximity of hydrants. Anticipating the zoning and planning maps, insurance cartography anticipated the dominant direction of urban mapping in succeeding decades.

Territory maps



¹⁷ Lorraine Daston and Katharine Park, *Wonders and the Order of Nature, 1150–1750*. Zone Books, 1994.

¹⁸ G. Palsky, *Des Chiffres et des Cartes: Naissance et Développement de la Cartographie Quantitative Française au XIXe siècle*. Paris, C.T.H.S., 1996.

19. The history guide is to P. Pearsall, *personal st household A–Z Map*

20. D. Cosgrove, "Mapping History We 1995, pp. 9

21. Tafuri, *Arc op. cit.*

22. M. Silver, ' in M. Silver eds. *Map: Digital Me Symposium 2003*, pp. 2

Controlling metropolitan cities was a dominant theme of 20th-Century urban mapping. The response to monster urbanism is recorded in maps, with the modern metropolis constantly threatening to outstrip the map's capacity either to make it legible or to regulate its material and social disorder. London, the first world-city of the 20th Century, is a prime example. The seemingly uncoordinated and uncontrollable sprawl of its suburbs, dramatically accelerated by mass transportation and later car ownership, anticipated forms and processes that now dominate city landscape and life globally. One heroic, individual response to metropolitan legibility was Phyllis Pearsall's 1935 creation of *London A to Z*, a pocket atlas with gazetteer of every street address in London. Her hugely successful commercial project began in response to a personal dilemma: finding an individual address without an adequate street guide of London. To create her urban atlas she walked 23,000 streets and a distance of nearly 3,000 miles.¹⁹ The outcome was a work that remains a handbook for every Londoner, but it reduces every urban element to the same format, abandoning any semblance of the city as a coherent urban structure in favor of its legibility as a continuously coded surface.

A more bureaucratic cartographic attempt to control the British metropolis was the 1932–34 *National Land Use Survey* in which school children recorded the use of every piece of land in England and Wales, including non-productive urban land. The London plate uses garish color to illustrate vascular urban tentacles strangling the soft green of rural England.²⁰ It can be read alongside the 1904 plan for Letchworth garden city or the 1999 map of Milton Keynes: urban visions designed to control London's spread. These represent the apotheosis of the map as an instrument of urban policy: not only to recapture the legibility of the city on paper, but to sustain its physical and social coherence as a material space.

In their own ways, these city maps reveal that the modernist faith in geometry as guarantor of urban legibility was unsustainable. Conventional Euclidean forms neither describe nor contain the spaces of the increasingly flexible, mobile, cybernetic city. Since the late 18th Century, the free-flowing serpentine line has battled with orthogonal geometry as privileged design medium for expressing the triumph of individual, natural man over the Classical or Christian model of the citizen.²¹ A minor element in the picturesque Letchworth plan, by late 20th Century Milton Keynes the serpentine line is omnipresent. It dominates post-modern urbanism in both street plan and built form. Indeed, high-tech mapping techniques help assure its triumph. Computer-based digital laser technologies allow 21st-Century architects to deform conventional building structures in response to new materials.²² These are mapping techniques that will soon be applied beyond such signature urban buildings such as Frank Gehry's LA Disney Concert Hall to the form of the city as a whole. Scientific mapping remains more successful in projecting the future form of the city than in capturing the legibility of its daily life.

¹⁹ The history of the A–Z guide is told by its creator in Phyllis Pearsall, *A–Z Maps: the personal story from bedsitter to household name*. Geographer's A–Z Map Company, 1990.

²⁰ Denis Cosgrove and S. Rycroft, "Mapping the Modern Nation" *History Workshop Journal*, 40, 1995, pp. 91–105.

²¹ See also, *Architecture and Utopia*, 1991, pp. 10–11.

²² M. Silver, "Mapping curves," in M. Silver and D. Balmori, eds., *Mapping in the Age of Digital Media: the Yale Symposium*, Wiley-Academy, 2003, pp. 40–47.

NEW LEGIBILITIES: THE ARTIST, THE MAP AND THE CITY

Pearsall's *London A-Z* project was intended to make the city legible for everyday life. We might contrast it with an entirely different but contemporary mapping of the modern metropolis of the German, Hermann Bollmann. Armed with a technique known to 19th-Century artist-cartographers as *Vogelschaukarten*, which dates back at least to Jacopo de' Barbari's 1500 map of Venice, Bollmann confronted modernity's most demanding urban landscape: Manhattan Island. Using 67,000 photographs, 17,000 taken from the air, he created in 1948 a hand-drawn map image that captures precisely the soaring quality of New York's skyline, while rendering streets and buildings with remarkable accuracy. Pearsall's and Bollmann's distinct mappings of the mid-20th Century metropolis may be used to illustrate a debate over how urban space is known and experienced and how it should be mapped.

In the early 1960s a group of French Situationists led by Guy Debord, inspired in part by Walter Benjamin celebrations of urban space and life, invented the *dérive* or drift as a way of experiencing everyday life in the city free from the attempts of authority to plan and regulate urban movement.²³ They explicitly associated the panoptical map with rational, alienating Modernity. Pearsall's London rather than Bollmann's Manhattan is the paradigmatic mapping mode for the group: derived from walking, signifying the view from the street, refusing all hierarchy of urban places, its pagination generating arbitrary discontinuities on the city map. The Situationist critique of the coherent urban plan in favour of the city as performance art has been a favored cause for later urban progressives such as Michel de Certeau and Rosalyn Deutsche, opening the idea of urban mapping to a range of artistic intervention over the closing years of the 20th and the opening years of the 21st Centuries.²⁴ These mappings may deploy the analytic capacities of scientific cartography, often using advanced technologies to rework some of the goals of early urban mapping. They seek to capture legibility from the contemporary city, not as a means of reworking its material spaces, but as a way of enhancing the experience of everyday urban life.

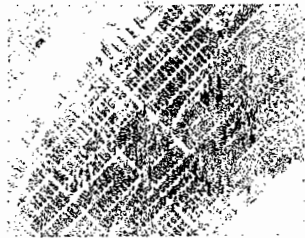
Guy Debord, *The Society of the Spectacle*, Zone Books, 1994.

M. de Certeau, *The Practice of Everyday Life*, University of California Press, 1985; R. Deutsche: "Boy's Town," *Environment and Planning D: Society and Space*, 9, 1991, pp. 5-30.

9/11: URBAN MAPPING AND ART

Space permits discussion of only one example of such creative use of mapping. But it is a powerfully telling example in its symbolic and ethical dimensions. Michel de Certeau's celebrated critique of scientific mapping's distanced and totalizing vision of the city took as its model the view of Manhattan from the top of the World Trade Center. Ironically, the destruction of those towers on September 11, 2001 presented, perhaps, history's greatest single challenge to urban mapping. Maps and plans of every system affected by the attack — transportation, utilities, communications, air quality — and new maps detailing its changing impacts were vital to the response mounted by the city's myriad public

Territory maps



See "Mapping the Homunculus," p. 200.

25. M. Silver, "Networked real-time Web," in *Mapping and Media*, op

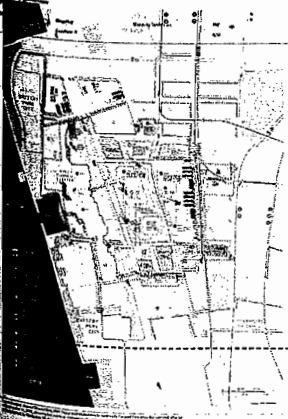


and private agencies. Cartographers used the latest Geographic Information System (GIS) technology to coordinate and plot these diverse data sets. Maps could not be redrawn in a continuously evolving situation as information fed in from scanners, satellites, and photogrammetry surveys had to be integrated with existing maps and databases for the affected zone. Over a three-month period, more than 2,600 maps were produced, using "techniques of layering, seriality and transparency, complemented by the destabilizing power of interactivity, movement and animation."²⁵ Many were made available on the web.

Over the extended period of recovery, interest among the public in the site remained intense: victims' relatives, New York citizens, distinguished visitors and ordinary Americans came to bear witness and observe progress. The scale of the site and the barriers erected to protect the recovery work made it almost impossible to the casual visitor to comprehend what they saw. In response, the artist Laura Kurgan who had previously used mapping techniques to explore a range of issues surrounding political violence, gained funding for the production of two editions of a map: *Around Ground Zero* published in December 2001 and March 2002. These used primary colors and simple graphics to identify key elements of the site: viewing platforms, temporary memorials, cranes and trucks as well as variously demolished or damaged buildings. Her maps negotiated the most delicate of ethical dilemmas given the implications of viewing a scene of mass murder from which human remains were being actively removed. They were distributed free to visitors.

The contemporary city presents both complex new challenges and enormous opportunities for mapping as do emerging survey and plotting technologies. Indeed, the map may be the only medium through which contemporary urbanism can achieve visual coherence. There remains a strong, if unrecognized, celebratory dimension to urban mapping, not merely in the banal sense of cities' self-promotion through advertising or tourist maps and plans, but in the choice of scale, content, design and color of the myriad cartographic devices (many today interactive), developed by public agencies and private bodies to communicate and regulate contemporary urban systems and processes. The goal of rendering legible the complex, dynamic and living entity that is a city remains an urgent one. But today's acute awareness that cartographic images can never be innocent vehicles of information dissolves neat distinctions between celebratory and regulatory urban maps. Urban space and cartographic space remain inseparable; as each is transformed their relationship alters. Current visual technologies mean that the opportunity for creativity in shaping and recording urban experience is greater than ever, as too is the need for critical attention to the making and meaning of both public and private urban spaces.

25. M. Silver and D. Balmori: "Networking maps: GIS, virtualized reality and the World Wide Web," in Silver and Balmori, *Mapping in the Age of Digital Media*, op. cit., pp. 48–50.



Territory maps

See "Monochrome Landscapes," pp. 310–319, and "Instruments of Uncertainty," p. 109.