Introduction: Mapping Meaning

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Trying to remember how they ever came to this place, both speak of passage as by a kind of flight, all since Tenerife, and the Mountain slowly recessional, having pass’d like a sailor’s hasty dream between Watches, as if, out of a seaholding scant color, blue more in name than in fact, the unreadable Map-scape of Africa had unaccountably emerg’d, as viewed from a certain height above the pale Waves, – tilted into the Light, as a geometer’s Globe might be pick’d up and tilted for a look at this new Hemisphere, this hauntèd and other half of ev’rything known, where spirit powers run free among the green abysses and sudden mountain crests, – Cape Town’s fortifications, sent crystalline by the Swiftness, rushing by from a low yet dangerous altitude as the Astronomers go swooping above the shipping in the Bays, topmen pointing in amazement, every detail, including the Invisible, set precisely, present in all its violent chastity.

Thomas Pynchon, Mason & Dixon, p. 38

This passage from Thomas Pynchon’s novel about the partnership between the two Enlightenment surveyors who, having observed the transit of Venus at Cape Town, went on to survey America’s best-known state line, captures much of the imaginative scope and projective power of mapping. That a century later Mason and Dixon’s astronomically surveyed Pennsylvanian border became the shatterbelt of America’s most destructive war says as much about the social efficacy and disruptions of mapping. The essays written for this collection also deal with imagination and projection, efficacy and disruption; with processes of mapping rather than with maps as finished objects. Each author has selected a moment in the long evolution of Western spatiality in order to explore some of the contexts and contingencies which have helped shape acts of visualizing, conceptualizing, recording, representing and creating spaces graphically – in short, acts of mapping.

As a graphic register of correspondence between two spaces, whose explicit outcome is a space of representation, mapping is a deceptively simple activity. To map is in one way or another to take the measure of a
world, and more than merely take it, to figure the measure so taken in such a way that it may be communicated between people, places or times. The measure of mapping is not restricted to the mathematical; it may equally be spiritual, political or moral. By the same token, the mapping’s record is not confined to the archival; it includes the remembered, the imagined, the contemplated. The world figured through mapping may thus be material or immaterial, actual or desired, whole or part, in various ways experienced, remembered or projected. In scale, mapping may trace a line or delimit and limit a territory of any length or size, from the whole of creation to its tiniest fragments; notions of shape and area are themselves in some respects a product of mapping processes. Acts of mapping are creative, sometimes anxious, moments in coming to knowledge of the world, and the map is both the spatial embodiment of knowledge and a stimulus to further cognitive engagements. In the contemporary world, with its seemingly limitless capacities for producing, reproducing and transmitting graphic images, the map is a ubiquitous feature of daily life: the route map at the bus stop or subway station, the weather map on television, the location map in the travel brochure, the iconic map of the commercial advertisement. Maps are thus intensely familiar, naturalized, but not natural, objects working within a modern society of high if uneven cartographic literacy. They are also troubling. Their apparent stability and their aesthetics of closure and finality dissolve with but a little reflection into recognition of their partiality and provisionality, their embodiment of intention, their imaginative and creative capacities, their mythical qualities, their appeal to reverie, their ability to record and stimulate anxiety, their silences and their powers of deception. At the same time their spaces of representation can appear liberating, their dimensionality freeing the reader from both the controlling linearity of narrative description and the confining perspective of photographic or painted images.

Recognition of the complexities and uncertainties of mapping is no startling insight. For those engaged professionally or technically in making and using maps – for example cartographers, surveyors, geographers and planners – the ambiguities of mapping’s claims have long been widely recognized: whether as problems to be overcome in a drive towards ever-increasing naturalism – representational accuracy, formal clarity and ease of use – or as intellectual and aesthetic opportunities and as stimuli to careful and critical interpretation. But the instrumental use of maps in daily life can obscure the epistemological and interpretative challenges that mapping presents. Thus, both for professionals and for many whose acquaintance with mapping and maps is more casual, the social authority acquired within modern culture through mapping’s historical naturalization, has resulted recently in a startling explosion of academic, artistic and cultural interest in ‘cartography’ as an object of critical attention. The fact of this renewed interest is easily demonstrated: in the 1980s the University of Chicago Press began publishing a multi-volume History of Cartography, a project of decades, jointly edited by David Woodward, a world-renowned authority on the technical history of maps and mapping, and the late Brian Harley, an equally celebrated scholar, whose theoretical and critical reflections on the broader cultural and historical contexts of cartography have influenced thought well beyond his own discipline of geography. The explicit intention of their project was to open the field of cartographic study far beyond a technical and internalist history of what had conventionally passed for a ‘map’, at least in the West: that is, an objective scientific representation of the earth’s surface or a delimited territory upon it, or thematically of the spatial pattern of selected phenomena. In 1992, the five-hundredth anniversary of Columbus’s first voyage stimulated a substantial scholarly re-evaluation of the relations between early modern mapping and colonialism, extending the scope of international conferences in the history of cartography held since then in Washington and Lisbon. Individual scholars have explored the status of mapping as a signifying process across historical time. Christian Jacob describes the changing paradigm of cartographic criticism as a shift from the ‘transparent’ view of the map as a neutral, informative transfer of external information into the simplified classificatory frame of the map space, conducted with the intention of achieving ‘an ideal correspondence of the world and its image’, to an ‘opaque’ view of the map which takes account of the selections, omissions, additions and inescapable contextual influences which shape the outcome of such transfers. Mapping is a process which involves both a ‘complex architecture of signs’ (graphic elements with internal forms and logics capable of theoretical disconnection from any geographical reference) and a ‘visual architecture’ through which the worlds they construct are selected, translated, organized and shaped. Beyond such projects within the formally designated history of cartography as the History of Cartography and Jacobs’s Empire des cartes, fashionable fascination with the map within the humanities and cultural studies is widespread; the ‘cartographic trope’ is seemingly ubiquitous in intellectual enquiry. Conferences such as the international meeting on Paper Landscapes held in London in 1997 attract large and well-informed participants from historical, literary and
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The reasons for this contemporary revisioning and rethinking of maps and mapping are not difficult to detect. For a politically, economically, technically and culturally globalizing world in which visual images have an unprecedented communicative significance, much is at stake in matters of space and its formal, graphic representation. The dissolution of an imperial, ‘eurocentric’ geopolitics and the end of the Cold War have not only reconfigured the political map of the globe, adding considerably to the kaleidoscope of colours and the tangle of lines used to demarcate the world’s recognized states, but rendered enormously more visible the individual differences between regions formerly subordinated to simple East–West and North–South global divisions; differences most clearly revealed by representing them cartographically. Economic change, driven by technical advances in information processing and communication and by new and highly flexible financial and industrial production systems, has reworked the experience and meanings of space. These have tended to render boundaries of all kinds permeable, not only those demarcating the territorial limits of state sovereignty. Indeed, the concept and practice of precise and permanent separation, of spatial ‘fixing’, inherent in boundary definition and conventional mapping (whose sine qua non is the bounding frame) represent an urge towards classification, order, control and purification. These are today regarded as defining features of a ‘modern’ mentality whose historical life has been relatively brief, whose goals have always been compromised (as in the case of Paul Carter’s coastal lines which connect as they separate), and whose cultural hegemony is today far from secure. In the opinion of many observers, it is the spatialities of connectivity, networked linkage, marginality and liminality, and the transgression of linear boundaries and hermetic categories – spatial ‘flow’ – which mark experience in the late twentieth-century world. Such spatialities render obsolete conventional geographic and topographic mapping practices while stimulating new forms of cartographic representation, not only to express the liberating qualities of new spatial structures but also the altered divisions and hierarchies they generate. Gilles Deleuze and Félix Guattari’s reference to the rhizome as a metaphor for half-submerged, non-hierarchical, open and unplanned spatial connection is a signal example. Culturally, at every scale, connections between phenomena formerly considered distinct and relatively fixed, rooted in space or holding to stable patterns of distribution and identity, have been shown to be contingent and unstable: for example the connections between between workplace and community, ethnicity and nationality, diet or religious practice and identity. An implicit claim of mapping has conventionally been to represent spatial stability, at times to act as a tool in achieving it. In a world of radically unstable spaces and structures, it is unsurprising that the idea of mapping should require rethinking.

Reasons for this rethinking are also to be found in the changing techniques of seeing and of making and reproducing graphic images. Powered flight in the first part of the twentieth century, as the social theorist Patrick Geddes and other modernist visionaries foresaw, has forced a revisioning of a cartographic imagination inherited in large measure from the military and political spatialities of nineteenth-century states. Initially, of course, flying was confined in experience to a relatively small and privileged number of people. But aerial photography and the movie camera disseminated the new visions of space made available by flight to very large numbers. Over the past four decades – and not only for people in the richer countries of the world – the direct experience of seeing the earth’s surface from ten thousand metres above it, passing ‘as a map’, through the perspect of an aircraft window, has become an astonishingly familiar one. During the same years, satellite photographs and remote-sensed images of the earth, produced at selected scale and with breathtaking clarity of resolution, have effectively replaced conventionally surveyed maps as the most practical way of accurately representing the earth’s surface and its physical geography. Both these shifts inevitably place in question the apparent stability and authority of conventional mapping with its selectivity, its colours, codes, signs and aesthetic conventions. Official state topographic map series, for example, generally produced by military or at least state personnel, and marked with the crests and symbols of state authority, have conventionally claimed to stand ‘for the country’. Between 1:50,000 and 1:150,000, their scale is comparable to that at which the
ground appears when seen from the normal cruising altitude of a passenger jet. But the differences in appearance between the two views of land place in question the authority of the knowledge represented by the map, stimulating critical reflection on the context and contents of the topographic map.

A third strand of the revolution in spatial representation during the past three decades is information technology, which permits spatially referenced data to be generated, manipulated and illustrated with a speed, accuracy and facility quite unimaginable within the memory of even relatively youthful people. For example, it is already technically simple to print out an Ordnance Survey or USGS topographic sheet whose scale and coverage are tailored to individual needs, centring the map according to consumer choice rather than covering the arbitrary area predetermined by the division of sheets in a given series. Such a service, becoming available in map stores and bookshops, has the capacity to alter quite radically the spatiality of those who use and work with such maps. On the screen, the continuous manipulation and transformation of spatial coordinates and the data they reference, for example by postal coding systems, produces a kind of kinetic cartography.

The naturalism of satellite and computer-generated images of the earth and spatial distributions (while itself as misleading as that of conventional maps) has destabilized the conventional architecture, meanings and significance of mapping and of maps, helping to expose to scrutiny the ‘authored’ nature of the latter. While such changes enormously enhance the social and political significance of spatial representations, they have the effect of rendering conventional mapping techniques such as visual triangulation, levelling and framing, and stylistic conventions of colour coding and signs, of historical rather than contemporary technical interest, thereby opening them to the critical scrutiny of the humanities and social sciences. The sophistication of modern remote-survey techniques and the new spatial images they have generated have also stimulated artists to rework the long historical connections between art and cartography? Art mappings have moved far beyond such early engagements as Nancy Graves’s 1970s enhancing of the limited tonal range of NASA’s Lunar Orbiter satellite’s encoded moon maps by retouching them in gouache and ink colours. Artists today exploit the technical power of computers to construct art objects out of spatially referenced data that can be manipulated across the screen. Mapping has become an installation art.

Academically, mapping has attracted attention also for reasons connected to more profound ontological and epistemological questions about the nature, fabrication, communication and authentication of knowledge of the external world. A widely acknowledged ‘spatial turn’ across arts and sciences corresponds to post-structuralist agnosticism about both naturalistic and universal explanations and about single-voiced historical narratives, and to the concomitant recognition that position and context are centrally and inescapably implicated in all constructions of knowledge. ‘Cognitive mapping’ means much more today than was conceived by its 1960s investigators, who took for granted the existence of an objectively mappable and mapped space against which their ‘mental maps’ could be compared. The continuity and inescapably bound within discursive frameworks that are historically and culturally specific, but all mapping involves sets of choices, omissions, uncertainties and intentions—authorship—at once critical to, yet obscured within, its final product, the map itself. Paul Carter gives a striking example in his discussion of the ‘coastline’, that elemental separating line between land and sea and at first sight the most fundamental and obvious boundary on any small-scale map. Not only are all coasts in fact zones rather than lines—the unstable space between high and low water in tidal zones, for example—which the cartographer has to ‘fix’ according to criteria which are inevitably arbitrary, but their linearity is mapped by determining a finite set of points which are then joined by a sweep of the cartographer’s hand to create a coastline. That sweep of the hand is governed as much by corporeal dexterity as by visual acuity and mimetic imperative. Draftsmanship in mapping, as Luciana Martins shows here, is a complicated and learned process whose practice involves as many acts of forgetting as of observing and remembering. And, as Lucia Nuti’s essay explores, the choice of mapping perspectives—vertical, horizontal, oblique—is a historical matter of shifting visual cultures which differently control not only the framed space of representation, but also the spatiality of the viewer, in position, scope and distanciation.

The critical attention that mapping and maps have thus attracted in the past decades has rendered any writing of ‘the history of cartography’ a vastly problematic task. From the early studies of Jomard and von Humboldt, who sought through facsimile reproduction and critical philology to bring to scholarly attention the role that maps had played in Europe’s progressive ‘discovery’ of the globe and organization of its varied spaces, to the critical collections of historical maps by scholars and archivists such as A. E. Nordenskiöld and R. Almagià, a history of
cartography was constructed over the course of the nineteenth and early twentieth centuries, governed by Enlightenment beliefs in disinterested observation, scientific calculation and objective representation as markers of universal rationality and progress. Mapping was figured as a form of literacy, a sign of civilization; it was thus restricted to a fairly closely defined form of knowledge collation and archiving. Mapping histories, while sensitive to the more or less distinctive non-European cartographic traditions of Islamic, Chinese and other non-European peoples, treated the latter according to criteria established in Europe rather than embracing the distinctive conceptual foundations upon which distinct mapping practices may be constructed, thus ignoring for example the fact that in Tibetan mapping the user 'is travelling not only through the areas and the places depicted but also through the related levels of signs, reality and abstraction, through logical steps, through cultural fields'.

11 'Accurate' cartography was figured as a rationalist European science, rooted in pre-Socratic Greek astronomy and Alexandrian and Roman imperial administration, synthesized by first-century Alexandrian scholars, most specifically Claudius Ptolemy. This cartographic tradition, 'rediscovered' by Latin Europe, after a regrettable medieval lapse into mythical mapping, was regarded as one element within a Burke-hardian Renaissance humanist project, which supposedly seized the 'torch' of ancient science from the faltering hands of Byzantium and Islam at the fortunate historical moment when Iberian navigators were introducing new spaces to a globalizing European episteme. 12 Thenceforth, with progressive technical and graphic accuracy, the shapes and surfaces of the earth's continents and oceans and, at more detailed scales, its regions and resources, have been brought within the orbit of a cartographic science which systematically rid itself of its early and disabling associations with religious belief, with myth and with imaginative art.

Constructing an historical sequence of Western maps - world maps, maps of a specific country, region or town that service a now globalized cartographic literacy - can act as a persuasive illustration of this narrative of increasing accuracy, especially when its reading is governed by a teleological naturalism which assumes that the contemporary map is the truest representation of actual spatial form and patterns, an assumption supported by the apparent objectivity of mechanically generated representations such as photographs or remote-sensed images. It is a relatively uncomplicated and intellectually fascinating task to disclose the technical means by which the mimetic gains in cartographic representation have been secured, for example through the late sixteenth-century invention of triangulation, or the eighteenth-century solution of the problem of fixing the longitude at sea by means of the chronometer. It is equally possible, and engaging, to trace a history of style and convention in maps, revealing how map-makers have copied, drawn upon and transformed the work of their predecessors in graphical representation. But such histories of products and techniques can serve to obscure two other sets of questions which bear heavily on any history of mapping. The first is the complex accretion of cultural engagements with the world that surround and underpin the authoring of a map, that is, treating the map as a determined cultural outcome. The second is the insertion of the map, once produced, into various circuits of use, exchange and meaning: that is, the map as an element of material culture. It is attention to these sets of questions which is implied by the term mapping. Any map may thus be regarded as a hinge around which pivot whole systems of meaning, both prior and subsequent to its technical and mechanical production. Here, I outline briefly some of the questions that histories of mapping rather than maps are obliged to confront; they are the questions variously addressed in each of the essays that make up this volume.

MAPPING MEANING INTO THE MAP

As an attempt to secure and convey spatial knowledge graphically, mapping may be regarded as a distinct epistemology, but one whose specific practices are historically and culturally variable. Among the consistent or a priori features of mapping are scale, framing, selection and coding. Scale is fundamental. James Corner in this collection, reminds us of the number of commentators who have used the idea of a map at the same scale as the territory it represents as the launch pad for speculation on questions of representation and reality. Enlarging or reducing the space generated and occupied by phenomena alters their form, their significance, their relations of meaning with other phenomena. Scale selection and manipulation is thus a powerfully imaginative and generative act which at once records and sets in train chains of meaning and association in an active process of knowing. Christian Jacob points to the origins of Greek mapping in speculative cosmology, an attempt to expose and explore the hidden rules and structures of physical creation by reducing them to the scale of a single, manageable representation: initially textual, later, with the aid of geometry, graphic. As an aid to philosophical speculation, scale played a different role from the one it would play in the production of topographical maps for artillery purposes. Michael Charlesworth's study of Christopher Packe's early eighteenth-century
chorography of Kent reveals a process in which choice of scale clarifies relations among selected phenomena and reveals patterns and harmonies invisible without such scalar manipulation.

Framing is as fundamental as scale: the preposition peri-, present in the earliest forms of Greek geographical mapping – the periploos, or descriptive circuit of the known earth – has the dual meaning of ‘surrounding’ or ‘containing’ and also of ‘overall’. Areal inclusion was initially achieved through a linear progression which in the Greek context of navigating the Aegean archipelago implied a distanced and coastal perspective, quite different from the conceptual containment of the survey lines of a triangulation. This serves to remind us that in mapping, as in picturing, the frame can connect to quite distinct epistemologies in fulfilling its fundamental topological functions, not only of separating inside from outside, but also of producing and organizing unity and totality within the space so contained. As Jacob claims in the context of ancient Hellenistic map-makers: 'one of the underlying dynamics of the Alexandrian culture is its attractive and magnetic power; collecting all the books ever written by the Greek world as well as by the Barbarians'. Framing is a territorialisizing, even imperializing, process, the map inescapably a classifying device. Thus, as Alessandro Scafì points out, mapping a place such as Paradise which acts as both a boundary and a centre creates almost insoluble epistemological contradictions. And self-conscious acts of frame-breaking, such as that seen on the Ptolemaic world map printed in Ulm in 1482, where Scandinavia and Thule extend beyond the northernmost latitude of the framed occumene, are uncanny, signalling epistemological anxiety. Failure fully to frame a land mass, or of mapped territory fully to occupy the map’s bounding lines, as in seventeenth-century maps of Van Diemen’s Land, speak of failures of vision and knowledge, of the uncertainty implied by the periploos – the meandering, linear progress whose trace may disappear into trackless space. ‘Blank’ spaces within the frame also generate and reflect aesthetic and epistemological anxiety; they are thus the favoured space of cartouches, scales, keys and other technical, textual or decorative devices which thereby become active elements within the mapping process. Scale and framing of course come together in projection, that necessity within geographic and topographic mapping to translate the globe’s three-dimensional, curving surface onto a two-dimensional plane through the agency of graticule. The abstract lines of graticule and grid, whether left visible on the map or erased in its final appearance, act both to secure a consistent semiotic connection between sign and signified (map and territory), and to contain, distribute and coordinate the internal signs and spaces of representation. Occupation of the abstract space they mutually produce is a matter of selection and coding.

The map differentiates itself from the territory precisely through acts of selection: in James Corner’s terms, creating a field through processes of ‘de-territorializing’ and ‘re-territorializing’. Conventionally – and in practical terms quite usefully – a distinction is often made between geographical and topographic maps which purport to represent areas in correspondence with their appearance to the eye, and thematic maps which highlight the spatial features of a selected topic: population, climatic patterns, religious affiliation, highway systems or tourist attractions, for example, often consciously staging the conditions for the emergence of new or previously unobserved realities. In fact, of course, all maps are thematic: selecting and highlighting specific phenomena, consciously removing others, ignoring yet more and rendering some choices incapable of adoption by virtue of prior decisions about scale and frame. Such choices and the presences and absences they create are profoundly significant both in the making and the meaning of maps. Considerable attention has been given in recent years to the power–knowledge relations involved in mapping’s selectivities: to the social and environmental exclusions involved in European colonial mapping, for instance, whose claims to objective knowledge practised a double denial of their selectivity, first of their often considerable dependence upon information supplied by non-European inhabitants of the territories mapped, and second of the physical and social landscapes as occupied and understood by those inhabitants themselves. But selection is aesthetic and moral as much as it is oppressive and exclusionary, aspects of the mapping procedure which have attracted less critical attention. Thus Luciana Martins points to the selectivity of visualizing and mapping in relation to the fickleness of memory within a practice which conjoins practical navigational and commercial interest, learned techniques of visual record-taking and personal experience, across extended times and places. Selection in mapping generates its own anxieties, many of them circulating around questions of the status of the knowledge presented on the map. In ancient Alexandria as in eighteenth-century Paris or nineteenth-century Greenwich, securing the rules of selection at the centre where the map is constructed involved issues of accuracy, truthfulness, significance and the moral integrity of those conveying necessarily fragmentary information from the periphery; in the extended chain of knowledge making and recording which constituted the mapping process. The map’s pretense to stable, uniform and
smoothly mobile knowledge depends upon inherently unstable, uneven, fragmentary, specifically positioned and haphazardly transferred information.

That information is also translated through the complex semiotic systems of cartographic representation, which uniquely combine geometry (in projection, measure, scale, gridding and plotting) and graphic images (mimetic and conventional signs, colour coding and calligraphy) with numerical and alphabetic inscriptions and texts. All the resources of visualization and graphic communication are combined in mapping; the map is perhaps the most sophisticated form yet devised for recording, generating and transmitting knowledge. This is dramatically apparent in the maps of Paradise discussed by Alessandro Scafi, which seek to actualize graphically a place that could only be plotted by imaginative vision. Having no empirical referent, the signs used in such maps as those illustrating Dante’s Hell seem more than usually realist, in the sense of being recognisable features: rocks, caves, castles and gateways taken from experienced space;⁴ the use of conventional cartographic signs as mapping devices on such images would impose a double distanciation. Mapping experienced, as opposed to imagined, spaces requires a semiotics which connects represented space to an idea of the real. As Lucia Nuti makes clear in relation to urban mapping, the system adopted is historically and culturally determined. Thus the preference among Italian mappers for the orthographic perspective and the ‘bird’s eye’ view which revealed the city as a unitary space, its contents such as house roofs and water bodies coloured according to the visual appearances of the external world, as opposed to the Flemish preference for the distance profile etched against a horizon, signals quite distinct visual cultures and their associated spatial languages. Ideals of social life and order and a projective planning imperative are as implicated in the Italian visual cultures as techniques of perspective and painterly convention. Panoramic mapping, which emerges from the convergence of these traditions, underpins Le Play’s and Geddes’s originating modernist visions of a planned civil society. More intriguing perhaps, is the emphasis placed by Geddes’s followers on citizens’ active participation in the panoramic mapping process, in the regional survey movement discussed here by David Matless. The possibilities for coding survey information through various signs and symbols placed within the representational spaces of the map, are theoretically unlimited, constrained only by the imagination of the map-maker and the practicalities of legibility and comprehension.

As Nuti’s example indicates, the epistemological bases of mapping cannot be divorced from their cultural historical realization. In this respect it is possible to identify and group mapping styles and schools historically and geographically and to relate these to much broader cultural contexts and genealogies. In so doing, the practices of mapping offer a point of convergence for studies of the history and geography of art and science, design and technology. The central role that mapping practices have played in shaping and figuring Western modernity as a global encounter, their significance in collecting, collating, producing and mobilizing knowledge, make them a vital entry point into an appreciation of changing mentalities. Thus the sophisticated techniques of copper engraving and the elegance of line and lettering apparent on Italian sixteenth-century printed geographical maps from the workshops of Bertelli, Fortini and Camocchio, for example, coupled with their relative tardiness in recording the latest maritime discoveries, by comparison with less aesthetically refined Spanish and Portuguese productions, testify both to the closeness with which mapping was connected in Italy to a sophisticated market in the commercial reproduction of art engravings and to Italy’s growing marginality in the political economy of European knowledge at this time. And not only do the design, colouring and lettering of many seventeenth-century Dutch and French maps make it appropriate to refer to them as ‘Baroque’ and relate them to aesthetic choices and styles in architecture, painting and illustration, but the very complexity and exhausting mass of intricately wrought and interlocking detail of their content unconsciously map too a mentality pivoting on the cusp of an overextended encyclopaedism, threatening to collapse into incoherence under the sheer mass of information they sought to synthesize, ever more ruthlessly elaborated in search of complex allegorical meanings and emblematic moral significance. Set against the simple frames, sparse styling, Roman lettering and uncluttered content of maps from a century later, these seventeenth-century works seem to be pleading for a new, ‘rational’ framework within which their promiscuous excesses of representation might be disciplined and controlled. Such a teleological reading, however, while indicating the capacity of mapping to connect with other practices in making and representing knowledge, serves to alert us also to the dangers of too great a reliance on stylistic analysis of the finished map at the expense of contextual re-engagement with the specific cultural practices of mapping from which it emerges.

**Mapping Meaning Out of the Map**

Mapping begets further mappings. This is true not only in the sense that all maps are based on prior records — field observations, notes and sketches, terrestrial and maritime surveys, statistical collections, imaginative
doodles, contemplative icons, preparatory studies — and are very often multi-authored productions, but also in the sense that a map, like any text or image, once completed and produced, escapes the contexts of its production and enters into new circuits of culture. Initial entry may be controlled to a greater or lesser degree, to be sure, as in the case of mapping for military officers or diplomats. Many of those historical maps that remain intact do so because they were celebratory icons such as the map cycles painted on the walls of palace galleries, the globes that graced the studios and halls of monarchs and the presentational atlases that ministered to the self-esteem of princes, generals and corporations, or objects of spiritual or moral contemplation such as the *mappaemundi* displayed in medieval cathedrals and the cosmological schemas on Hindu prayer wheels, or as legal documents to be conserved in archives, such as those accompanying peace treaties, marking the sale and purchase of real estate, planting a colony or planning a garrison, town or city. Fewer maps intended or used for practical purposes of navigation or location-finding remain, and still fewer of those sketched for immediate practical ends such as navigation, battle or field research, which are exhausted in the execution of their purpose. This distorted legacy tends to underemphasize the partial, open and contingent qualities of the map object in favour of its closures, certainties and aesthetics. Contemporary scholarship seeks often to reverse that tendency by seeking out the instabilities of meaning in the finished map, its openness to interpretation and its stimulus to further elaborations of spatial meaning. Thus Jerry Brotton’s re-examination of one of the more intriguing questions in the history of cartography why terrestrial globes suddenly appeared almost de novo over a period of less than three decades as a popular item of material culture in early sixteenth-century Europe, seeks clues in their use rather than in the techniques and practices of their production. The diplomatic imperatives consequent upon Magellan’s circumnavigation offer his answer: the application in an eastern hemisphere of the papal division of global space made on a flat map at Tordesillas in 1493 was possible only with the use of the new cartographic instrument of a spherical globe. Coincidentally, the same events, in relativizing the cardinal directions of east and west, helped finally to remove Paradise from European world maps. Once produced and used in such high diplomatic circumstances, the globe could be incorporated into the long tradition of regarding the sphere as a symbol of divinely authorized imperial status, enabling the rival claims of European potentates to universal empire to be simultaneously territorialized and symbolized.

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The map as material object participates in wider discourses, or mappings, which generate sophisticated metaphorical meanings well beyond the confines of kingliness or territorial imperialism. One example is the play of meanings between map and human body which so excited thinkers in the early seventeenth century. John Donne’s frequent analogies between planispheres or colonial maps and the body of his female lovers has been widely commented upon, its implications of colonialist desire and appropriation an obvious target for critical attention. Jonathan Sawday’s examination of the parallels in Donne’s time between geographical discovery and medical autopsies as discourses of personal vision that worked through similar representational processes of map-making and reading suggest that the poet was elaborating a widely recognized trope. Further, the appearance of maps and globes among the most common features of seventeenth-century devices and emblems indicates mapping’s widespread significance in popular culture, playing a role far beyond its function of recording and transmitting purely spatial information. Moral mapping used cartographic images as imaginative and devotional devices, a stimulus to self-reflection. It is thus that the map appears so commonly as a carefully crafted and displayed item within Dutch domestic paintings, for example in Vermeer’s interiors. This moral or emblematic significance and use of maps continues into the twentieth century. David Marless’s discussion of the regional survey movement in interwar Britain emphasizes mapping as a mode of harmonizing citizen, community and place in the visionary construction of a modern society. Connecting the mapping language of straight line, viewpoint, panorama, survey and vision to ecology and psychoanalysis, C. C. Fagg, Geoffrey Hutchings and Hilaire Belloc rework a long-standing mapping discourse which engenders moral and metaphysical connections between interior and exterior worlds. The physical, specifically sexual, human body mediates these worlds in the writings of both John Donne and the regional surveyors.

Another form of mapping is the creative probing, the tactical reworking, the imaginative projection of a surface. Here, mapping becomes the two-dimensional ‘staging’ of actuality or desire, and it has a long genealogy. ‘Perspective’ has a temporal as well as spatial meaning — looking forward, the sense of prospect. Thus the map excites imagination and graphs desire, its projection is the foundation for and stimulus to projects. Mapping Paradise or Hell can have no function other than to guide the viewers’ faith and direct their conduct towards life after death. All utopias require mapping, their social order depends upon and generates a spatial
order which reorganizes and improves upon existing models. The dominant tradition in orthogonal urban mapping since the earliest experiments by Alberti and Leonardo da Vinci to chart Rome or Imola, through the fortress plans of Vauban discussed by Armand Mattelart, to the garden cities proposed by Geddes’s disciples, has been concerned with projects to secure the city as a single socio-territorial order, be it in the interests of ruler, military commander or democratic citizenry. Leon Battista Alberti’s 1420s reworking of Vitruvius’ architectural text (which itself grew out of Augustus’s replanning of Imperial Rome) stimulated a stream of utopian urban designs from the hands of Renaissance architects: Filarete, Serlio, Scamozzi. Enlightenment statistical mapping of urban poverty, crime or other social pathology was driven by the same implicitly totalizing impulse to visualize and authorize a new order, reaching a kind of apotheosis in the comprehensive planning strategies of the mid-twentieth century, vast mapping exercises which both generated and depended upon volumes of spatially organized statistical data, charts and coloured images. These were paper landscapes of bewildering complexity which sought to envision and determine comprehensive social and spatial structures for entire metropolitan regions over decades into the future. Even the French Situationists’ subversion of this totalizing cartography by means of a fragmentary and arbitrary mapping strategy owed its radical significance to the projective authority of mapping, its goal much more than simply to record the disconnected and personal nature of urban experience. The dérive was intended to project alternative ways of inhabiting the city through the imaginative power of the personal mapping act. Such a strategy highlights the oppositional opportunities offered by mapping as well as its repressive capacities. The same cartographic documents which in the eyes of colonists have so often secured the legality of their appropriation of aboriginal lands today act alongside quite distinct mappings such as rock markings and memory lines to secure land claims in a post-colonial era.

**Mapping Essays**

In preparing the individual essays in this collection, the authors were asked to consider their subject matter in the light of revised conceptions of mapping. They might question what mapping has meant in the past and how its meanings have altered; how mappings have served to project, order and arrange as well as to represent physical, social and imaginative worlds; how mapping practices have shaped modern seeing and knowing; how contemporary changes in experiencing the world alter the meanings and practice of mapping; how mappings inaugurate as well as trace a poetics of space. While acknowledging the breadth of meaning and the metaphorical reach of ‘map’ and ‘mapping’ in current writing and encouraging contributors to embrace these in their own thinking, the intention was to focus the essays around actual graphic representations of spatial patterns which may fall under a broad category of maps. Thus, for example, while a circuit diagram, a tattooed torso or the topos of the heavenly Jerusalem could all fall within their remit, the textual narrative of a journey or a purely abstract, non-referential image of line and colour would not.

The essays are sequenced according to very broad historical and thematic criteria. Historically, they pinpoint ‘moments’ long recognized as significant in the genealogy of mapping in the West, but neither constructing an evolutionary narrative of mapping history nor pretending comprehensive coverage of such moments; indeed only the first pair fall outside the period of ‘modern’ mapping, and each essay makes forward reference to modernity. Greek mapping in Antiquity exercises a fascination because of its close connections with the Greek philosophical project of distinguishing rational thought and explanation from myth and poetic narrative. No corpus of maps survives from ancient Greece and Rome, only textual records of mapping practices, from which such scholars as Christian Jacob seek to reconstruct the cartographic concerns of Antiquity. From the medieval West, by contrast, we have been left in cosmographic diagrams and imagini mundi a variety of images long recognized as maps, but restricted evidence of the actual mapping practices through which these were conceived, made and used. As Alessandro Scafì reveals, they are best understood as exegetical and visionary rather than as secular and pragmatic exercises.

The profound connections between mapping and modernity were forged in the early fifteenth century with the coincidence over a mere five decades of a Latin translation of Ptolemy’s *Geographia* which offered systematic methods of projection and graticule construction, and single-point perspective as a geometrical technique for manipulating two-dimensional representational space, and the development of moveable type, which allowed the rapid and cheap reproduction of graphic images, their circulation, scholarly comparison, revision and updating. That these conceptual and technical mapping tools converged over the succeeding centuries with oceanic navigation and commercial contacts between Western Europe and transatlantic regions and with the internal reorganization of European territorialities through nation-state construction,
commercialization of agriculture and urbanization, has served to give mapping practices a powerful significance in representing and projecting a distinctively modern mentality. Many of the debates that have circulated around mapping and modernity are already apparent in the first century of the new cartography, and are explored by Jerry Brotton and Lucia Nutini. Thus circumnavigation produced a decisive moment in cartography as the technical and conceptual implications of representing a spherical earth became immediate and material. The consequences of this achievement in opening a seemingly unlimited volume of new geographic, climatic, botanic, zoological and ethnographic materials to Western consciousness challenged and eventually defeated cosmography, a form of mapping and universal synthesis whose roots lay in the medieval encyclopaedia. Such problems of spatial representation were not confined to the global or geographical scale, they appeared also at the regional or chorographic scale of Ptolemy’s influential mapping hierarchy. Chorography’s complex synthesis of scientific measurement and geometrical survey on the one hand, and painterly and artistic skill on the other offered the opportunities and pleasures of mapping locally circumscribed land and life as a microcosm of a greater order.

Consciousness of the issue of scale in conceptualizing and representing space and its contents is by no means a product of modernity: Democritus and Lucretius already theorized the atom as the tiniest scale at which matter is realized, while medieval mappaemundi sought to map a cosmos whose intelligible if not sensible space extended to the eternity of a supercelestial realm. Modernity is distinguished by its concern with the human eye’s physical capacity to register and to visualize materiality at every scale. The telescope and the microscope are the iconic instruments of scientific revolution; to them we might add those instruments for topographic survey such as the sextant and the alidade. Each becomes a mapping instrument through the agency of those draughting tools by which visual knowledge is pictured on the two dimensional surface: the pencil, the compass and the set square. In early modern texts, these items are the iconic accompaniments of philosophy, geography and architecture, signifying respectively the disciplines of understanding, exploring and creating space. Conscientious instrumentation of scientific knowledge, to which mapping made an important contribution, was a significant feature of the Enlightenment from the seventeenth century, not only securing knowledge but ensuring its accurate representation, as Michael Charlesworth reveals in the case of Christopher Packe’s survey of Kent. While Packe may have articulated his project in terms of natural theology, the techniques he helped develop would be used for the increasingly secular ends of applied science in subsequent years, as both the techniques and products of mapping underwrote schemes of social and environmental improvement.

Two small images by William Blake from the late eighteenth century might serve as emblems of modern mapping’s dual regard. In one, a patriarchal divinity reaches out of the circle, compass in hand to map the hidden order of creation; in the second it is Isaac Newton, paradigm of scientific reason, whose compass maps the human project. Appeals to intelligible spatial order have tended to lose the warrant of divine authority, forced in the past two centuries to negotiate perceptible patterns whose own truth claims are open to contestation and revision, thus requiring evidential support, such as that provided by ‘scientific’ mapping. Both Paul Carter’s and Luciana Martins’s essays subject the mapping practices of Enlightenment navigators to close scrutiny, exposing the limitations of their claims to scientific vision, archiving and recording. The mapping moments discussed by Armand Mattelart and David Matless bear witness to the survival in an era of empirical mapping of visionary desires to coordinate the incidental, discontinuous and contingent nature of perceptible space with more conceptual, and universal, patterns and morphologies. Finally, James Corner and Wystan Curnow consider mapping today, at a moment when faith in the possibilities of both disinterested, empirical mapping and universal objective mapping is shaky, and when mapping and imaginative art are reinvigorating their long-standing mutual connections. Their essays seek to move beyond the impasse into which theoretical discussions of mapping which are couched in oppositional terms of the real and the represented inevitably lead. The most challenging mappings today are found in the creative and imaginative work of artists, architects and designers, neither seeking absolute empirical warranty for their maps nor claiming for them any metaphysical revelation. Mapping in a flexible era has become a creative and critical intervention within broader discourses of space and the ways that it may be inhabited. Mapping is freed from the problems of factual legitimacy and authority with which a centric and rationalist model of absolute space has until recently burdened it.

Beyond their broad chronological arrangement, individual essays adopt a distinctive perspective on mapping. Comparing Alexandrian mapping in the classical past with the eighteenth-century D’Anville, Jacob reveals how that centric, rationalist and archival model of mapping which replaced its initial ontological purposes within Greek practice
pressed the cartographer at the (rational) centre towards philological procedures and moral interrogations of mapping sources, designed to authenticate the data returned from a (potentially irrational) periphery. Alessandro Scafì’s study of mapping Christian Paradise raises similar questions of rendering the unseen visible while fixing the boundaries of myth, but in a different context: that of a place which was on earth but not of earth, an unseen space for whose existence textual evidence alone was available and whose terrestrial location – which the mapping exercise was designed to determine – was a geographical paradox: simultaneously boundary and centre. The point where East meets West on a spherical earth, an opposite location perhaps for Eden, becomes in 1522 a matter of vital significance in the temporal relations between states. This is the theme of Jerry Brotton’s essay which, in addition to examining the appearance of the terrestrial globe as a favoured mode of mapping earth space, points to Magellan’s circumnavigation as a critical moment in the emergence of globalism as a ‘spatiality’ within modern consciousness.

Evolution of a global spatiality with its implications of boundlessness, uninterrupted movement and communication works dialectically across the evolution of modern consciousness with a discourse of localism, rootedness and bounded territoriality. Both Lucia Nuti and Michael Charlesworth broach the role of chorography in mapping such a sensibility. Nuti traces the fortunes of two sets of technical issues raised in such mapping: the first deriving from Ptolemy’s distinction between geographical mapping – fundamentally a mathematical exercise which privilege theoretical knowledge over sensory experience – and chorographic mapping which places emphasis on the recognizable qualities of the visual image, including its colours, symbols and contours. The second paired techniques for positioning the ‘mapping eye’ in relation to the spaces represented. For city views, Nuti distinguishes between the Italian tradition of capturing the community as a totality, relating this to the humanist desire to figure the Renaissance city as a reincarnation of the ancient Greek polis, as a single social and spatial order, and the Northern, specifically Flemish, tradition of the profile. As Nuti points out, the story of their resolution in the bird’s eye views of the later sixteenth century represents the beginnings of a search for global knowledge of a town or region which would eventually yield modernist social-scientific urban mappings. En route to these, natural theology makes its own contribution to the epistemological connection that mapping seeks between the global and the local. Charlesworth’s study of Christopher Packe’s mapping of the English county of Kent from the vantage point of Canterbury cathedral tower shows how the limited and parochial autocelebration which constituted seventeenth-century chorography could be raised rhetoric ally to global significance by connecting it with natural theology, whereby the topographic and spatial perfection which Packe’s complex semiology figures is at once macrocosm of the anatomized body and microcosm of the greater physical creation.

The instrumentation with which Packe sought to bring his art to greater perfection was the foundations of modern mapping’s scientific claims. The story is a familiar one, of the invention of the chronometer for accurate longitude-fixing at sea, of national academies and scientific societies competing through well-funded navigational expeditions to plot the world’s oceans and continents, together with their flora, fauna and peoples, onto the global chart: Bougainville’s and Cook’s voyages are only the most frequently cited. In focusing on mappings of the harbour at Rio de Janeiro by British navigators trained ‘to keep their eyes and ears open’ and to privilege drawing over written accounts because of the immediacy of their record, Luciana Martins not only reveals the complexity of connections between scientific mapping and the nexus of geostrategic, imperial and commercial interests, but also the commerce of images and the processes of seeing, recording, remembering and forgetting through which distant places were mapped into European knowledge systems. The issues of mobile knowledge, truth and authentication which extend from ancient Alexandria to nineteenth-century Greenwich, as imperial archiving centres sought accurately to map peripheries, are shown to stretch far beyond the moral status of the individual informants; they are structured into the cognitive and visual histories of those informants so profoundly that even ‘on the spot’ mappings are also inescapably hybrid products of other places and times. Paul Carter reinforces this recognition of the limitations of Enlightenment mapping’s proclaimed transparency in transposing the objects of pure vision onto the chart.

For French St Simonians as for British Geddesians, mapping’s capacity to penetrate the incidental superficiality and contingency of the local and immediately visible landscape and reveal larger intent in its structure and pattern was both a social and an intellectual imperative. For the former it was the network, a cartesian arrangement of points and connectivities which constituted a territory. Technology materialized the network, allowing information to pass ever more freely and speedily, equalizing access and offering the promise of democratic social order and human liberty. Armand Mattelart traces the imaginative appeal and the democratic limitations of this belief in the power of communications to map a
utopia across the space–time of idealized networks, from the semaphore telegraphy of revolutionary France, through electric cables, the telephone, satellites and the internet. British faith in the power of mapping to sustain and enhance civic cohesion appears, characteristically, more pragmatic and pedestrian, and also eccentric, even bizarre, as David Matless shows in an examination of the extraordinary amalgam of beliefs and theories with which a group of British social idealists surrounded regional survey in the interwar years. Supposedly controlling the unruly libido of young people, Geddesians drew upon Freudian theory to promote through survey and mapping a balanced citizen, liberated too from the potentially homogenizing effects of mass culture in modern society. From the perspective of the youthful mapper, atop a vantage point or at the Archimedean distance point offered by flight, the regional surveyors sought grounding, attachment and informed citizenship.

Two final essays address mappings today, drawing upon the freedom allowed by mapping’s separation from narrowly scientific duties of survey, record and plan. James Corner reviews mapping’s generative capacities to stage spatial arrangements in the context of contemporary space–time experience and understanding. He emphasizes the creative, even playful, process of discovering and engendering through mapping new connections and relationships among disparate elements. Where network enthusiasts and regional surveyors mapped to disclose and impose order, Corner maps to create fields for projects. Drawing on design practice, he offers four thematic ways of realizing mapping’s projective capacities: ‘drift’, where mapping acknowledges open-ended even goal-less, movement across space; ‘layering’, which superimposes spatial elements and experiences, less exposing than intervening imaginatively in their interconnections; ‘game-board’, which recognizes and enables the actions of contesting agents across a design space; and ‘rhizome’, realizing graphically the metaphor of non-centric, organic spatiality. Curnow further opens mappings’ imaginative capacities by tracing the ways in which conceptual artists since the late 1960s have used them to explore specifically artistic questions. What are the relations between site and artwork? How can mapping enhance and record the performative aspects of relations with space? What are the implications of seeing the earthly globe from space? How can mappings contribute to the post-colonial disruption of taken-for-granted geographic and ethnographic assumptions? Above all, Curnow claims, it has been performance and installation artists, breaking with Western art’s painterly conventions, who have most successfully exposed the limitations of mapping’s visualist assumptions. Corner and