



Silences and Secrecy: The Hidden Agenda of Cartography in Early Modern Europe

Author(s): J. B. Harley

Source: *Imago Mundi*, Vol. 40 (1988), pp. 57-76

Published by: Imago Mundi, Ltd.

Stable URL: <http://www.jstor.org/stable/1151014>

Accessed: 05/03/2010 06:53

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=iml>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Imago Mundi, Ltd. is collaborating with JSTOR to digitize, preserve and extend access to *Imago Mundi*.

<http://www.jstor.org>

Silences and Secrecy: the Hidden Agenda of Cartography in Early Modern Europe

By J. B. HARLEY

'On a visit to Leningrad some years ago I consulted a map to find out where I was, but I could not make it out. From where I stood, I could see several enormous churches, yet there was no trace of them on my map. When finally an interpreter came to help me, he said: "We don't show churches on our maps." Contradicting him, I pointed to one that was very clearly marked. "That is a museum," he said, "not what we call a 'living church.' It is only 'living churches' we don't show."

It then occurred to me that this was not the first time I had been given a map which failed to show many things I could see right in front of my eyes. All through school and university I had been given maps of life and knowledge on which there was hardly a trace of many of the things that I most cared about and that seemed to me to be of the greatest possible importance to the conduct of my life. I remembered that for many years my perplexity had been complete; and no interpreter had come along to help me. It remained complete until I ceased to suspect the sanity of my perceptions and began, instead, to suspect the soundness of the maps.'

E. F. Schumacher, 'On philosophical maps,' *A guide for the perplexed* (New York, 1977).

Introduction

The present paper picks up a theme explored more fully in the context of the ideological dimensions of cartography.¹ It is concerned with the dialogue that arises from the intentional or unintentional suppression of knowledge in maps. It is based on a theory of cartographic silence. My reading of the map is not a technical one (this already has a voluminous literature) but a political one. The aim in this paper is to probe those silences which arise from deliberate policies of secrecy and censorship and to examine the more indeterminate silences rooted in often hidden procedures or rules. These rules, it can be argued, are a sort of subconscious *mentalité* that mediates the knowledge contained in maps in order to maintain the political *status quo* and the power of the state. Although much of what is said here applies to all periods, including the present,² the focus is on early modern Europe. Maps from the sixteenth century onwards offer particularly clear opportunities for the exploration of a new perspective on the changing and reciprocal relationships between the rise of the nation state and the expansion of cartography.³ The establishment of stability and durability, the primary tasks of each and every nation state,⁴ in early modern Europe as at other times, provides the background to this essay. In outlining, first, the theoretical framework, it will be argued that cartography was primarily a form of political discourse⁵ concerned with the acquisition and maintenance of power. Examples drawn from the maps themselves will then be used in support of this argument.

Theories about silences in maps

Mapping in the nation-states of early modern Europe offers examples of many types of cartographic silence. As in the history of cartography as a whole it would be possible to construct a broader typology of silences. Silences are contributed by many agents in the map-making process, through the stages of data gathering to those of compilation, editing, drafting, printing, and publication.⁶ In assessing silences we must be aware not only of the geographical limits to knowledge but also of the technological constraints to representation, and of the silences in the historical record owing to the destruction of evidence. In the present essay, however, I am not concerned with those silences which arise from geographical ignorance, lack of data, error, the limitations of scale, deliberate design or other aspects of specification and technical limitation.⁷ I am dealing here with political silences. An adequate theory concerning

the political silences in maps is thus central both to my interpretation of the nature of state cartography and to the ways in which maps were used to maintain and legitimise state power. My theoretical position is derived from two directions. The first concerns a philosophical and, more particularly, a phenomenological, understanding of silences.⁸ The second concerns the sociology of power and the idea that knowledge is power.

From the philosophers we learn that silence is a phenomenon ‘encountered in every segment of human experience in which utterance takes place.’⁹ We learn, too, that utterance is defined as ‘any performance employing systematically related signs, sounds, gestures, or marks having recognizable meanings to express thoughts, feelings, states of affairs’ and that the ‘deployment of any sort of language is counted . . . as an utterance.’¹⁰ This means that although most obvious are the silences which occur in speech and music, they also occur in non-performing arts such as painting and sculpture.¹¹ In this way, the concept of silences is also applicable to maps. To ignore or downgrade these silences—as both the history of cartography and cartography have done—is to close up an important avenue of historical exploration, one in which maps can be seen to engage both the imagination and the social preconceptions of their readers.¹²

Thus we learn that that which is absent from maps is as much a proper field for enquiry as that which is present. A second insight derived from the philosophical direction is that silences should be regarded as positive statements and not as merely passive gaps in the flow of language. So, allowing for those gaps on the map which make the pattern of lines and points a comprehensible image, we should be prepared to regard silences on maps as something more than the mere absence of something else. I am deliberately insisting on the term ‘silences’ in the context of maps, rather than the somewhat negative ‘blank spaces’ of the older literature,¹³ for the reason that silence should be seen as an ‘active human performance.’¹⁴ Silence can reveal as much as it conceals and from acting as independent and intentional statements, silences on maps may sometimes become the determinate part of the cartographic message. So, just as in verbal communication the silence is more than the mere correlate of what is sounded, in the case of a map the silence is not merely the opposite of what is depicted. The white spaces which abound on the maps of early modern Europe, for example, cannot be explained simply by positing ‘fact’ against ‘no fact’. Silence and utterance are not alternatives but constituent parts of map language, each necessary for the understanding of the other. A cartographic interpretation of silences on a map departs, then, from the premise that silence elucidates and is likely to be as culturally specific as any other aspect of the map’s language.¹⁵

My second insight comes from sociology. This helps us gain an historical understanding of cartographic silence. It involves seeing cartography as a form of knowledge and that knowledge as discourse. In this light, maps are interpreted as socially constructed perspectives on the world, rather than as the ‘neutral’ or ‘value free’ representations that, some historians insist, define the rise of state cartography in early modern Europe. This myth of a measurement-based ‘objectivity’ in maps has yet to be stripped away: the application of the sociological concept of ‘power-knowledge’ to the history of cartography is another step in that process.¹⁶

From the sociological literature on the nature of knowledge, I have drawn in this essay on the ideas of Michel Foucault¹⁷ to help interpret the categories of cartographic silence—the intentional and the unintentional—identified below. Two sets of ideas in particular seem of direct relevance: the idea of power-knowledge (*pouvoir savoir*) and the concept of an *episteme*.

1. Foucault constantly stresses the relationship between power and knowledge. For him, this serves to frame the instances of deliberate secrecy and censorship. He writes that:

‘We should admit . . . that power produces knowledge (and not simply by encouraging it because it serves power or by applying it because it is useful); that power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations.’¹⁸

While the universality of these assertions may be rejected, it is easier to accept the implication that the map was an instrument of power and that much of the instrumentality of maps in early modern Europe was concerned with power in one form or another. Foucault seems to have accepted the map as a tool of state measurement, enquiry, examination and coercion.¹⁹ In

his view, cartographers provide the state with a mass of information which the state, from its strategic position, is able to exploit. Moreover, the state was also frequently able to impose its own rules upon this cartographic knowledge, giving rise to the silences that are induced by those occasions of deliberate secrecy and censorship that recur so often in the history of European state mapping. Elsewhere, Foucault goes on to note that the production of discourse in every society 'is at once controlled, selected, organised and redistributed according to a certain number of procedures.'²⁰ In the case of cartography, these procedures involved external controls, internal rules, and the regulation of access to knowledge. Thus a state gains power over knowledge.

2. The second set of Foucault's ideas, the *episteme*, helps us interrogate the unintentional silences on maps (the residual 'blank spaces' of the older cartographic literature). As already noted, these silences are 'active performances' in terms of their social and political impact and their effects on consciousness. They are, moreover, a feature of all discourse,²¹ part of the cultural codes which underlie all forms of knowledge and which structure 'its language, its perceptual schemata, its exchanges, its techniques, its values, the hierarchy of its practices.'²² As far as early European maps are concerned, we find that these silences are best understood in terms of 'historical *a priori*' which 'in a given period, delimits . . . the totality of experience of a field of knowledge.'²³ These historical *a priori* form what Foucault once termed an *episteme*:²⁴ like all other knowledge, cartographic knowledge is similarly delimited, so that while some information is included on the maps, other aspects of life and landscape are excluded according to the *episteme*.

Thus equipped with these philosophical and sociological insights into the meanings communicated by the 'blank spaces' on maps, it seems to me we are in a better position to attempt to unearth the history of those meanings. We may be better equipped, too, to unravel those systems of 'non-formal' knowledge that suffused everyday cartographic practice in early modern Europe, as it does still.

Secrecy and censorship: The intentional silences in maps

By the sixteenth century literary censorship of various kinds was a common aspect of European culture as the emergent nations struggled as much for self-definition as for physical territory.²⁵ It will be shown here how the production of cartographic knowledge was similarly controlled, selected, organized, and redistributed according to definite procedures. Even in many ancient and traditional societies maps were frequently regarded as privileged knowledge, with access given only to those authorized by the state or its ruler.²⁶ By the early modern period, cartographic secrecy (maintained by what may be defined as rules of exclusion and prohibition) was clearly widespread and the 'official' cartography of this period furnishes a classic case of 'power-knowledge'.²⁷ At the very time maps were being transformed by mathematical techniques, they were also being appropriated as an intellectual weapon of the state system. If their study had become, by the end of the sixteenth century, the 'science of princes,' it was because maps were by then recognized as a visual language communicating proprietary or territorial rights in both practical and symbolic senses.²⁸ In cartographic terms, however, the exercise of such power could be negative and restrictive. The map image itself was becoming increasingly subject to concealment, censorship, sometimes to abstraction or falsification. It is these deliberate manipulations, willed by individuals, groups, or institutions,²⁹ that give rise to our category of intentional silences.

Of course, we have to reconcile, map by map, the study of these intended cartographic silences with the complexity of different historical events. The immediate circumstances which led princes, both secular and ecclesiastical, and their advisors, to control cartography by means of censorship and secrecy spanned a wide range of their vital interests. These could be military, commercial, or religious. So, for example, on Jesuit Matteo Ricci's world map published at Peking in 1602, the sacred places of Christianity are suitably annotated while those of Islam appear without comment, the reason for Ricci's silence being that he knew 'the Chinese would be unlikely to be drawn to the religion he was preaching if they knew that deep fissures of belief existed in the Western world from which that religion came.'³⁰ Reflecting different ways of

sharing power within nation states in sixteenth and seventeenth century Europe, the manner in which control over maps and their content was effected also varied. In some states, control centered on the crown and a group of close advisors. In other cases, it was delegated to a bureaucratic institution. In either case, the effects were complex, even paradoxical, while elsewhere policies of secrecy were inconsistently applied. On the maps of sixteenth- and seventeenth-century Europe these aspects of national secrecy are manifested in various ways. Here we shall consider just two ways; first, examples of strategic secrecy; and second, cases of commercial secrecy.

(i) Strategic secrecy

Some of the most clear-cut cases of an increasing state concern with the control and restriction of map knowledge are associated with military or strategic considerations. In Europe in the sixteenth and seventeenth centuries hardly a year passed without some war being fought. Maps were an object of military intelligence; statesmen and princes collected maps to plan, or, later, to commemorate battles; military textbooks advocated the use of maps. Strategic reasons for keeping map knowledge a secret included the need for confidentiality about the offensive and defensive operations of state armies, the wish to disguise the thrust of external colonization, and the need to stifle opposition within domestic populations when developing administrative and judicial systems as well as the more obvious need to conceal detailed knowledge about fortifications.³¹

But besides these understandable and practical bases for military secrecy, an increasing number of states adopted a more custodial attitude towards maps of their cities and territories in general independent of such strategic considerations. The Dutch merchant Isaac Massa, for example, who was living in Muscovy in the late-sixteenth century, found it difficult to obtain maps of both Moscow and the Siberian territory only because it would have been a capital offence to supply him with such maps.³² In the same century, the *Bol'shoy Chertyozh* map (which shows the whole of the Muscovite state) seems to have been drafted in only one copy and to have remained wholly unknown to western European map-makers.³³ Similar policies have been common throughout Europe and can be found, for example, in Prussia in the sixteenth and seventeenth centuries;³⁴ in late-sixteenth century Italy (map of the Kingdom of Naples);³⁵ in sixteenth-century Spain (the 'Escorial atlas');³⁶ in seventeenth-century Switzerland (Hans Conrad Gyger's map of the Canton of Zurich).³⁷ Herein lies one of the paradoxes of map history. Just as the printing press was facilitating the much wider dissemination of survey data, and just as regional topographical maps were being made for the first time, so, some states and their princes were determinedly keeping their maps secret through prohibiting their publication.

Why did some states insist upon cartographic secrecy while others allowed the publication of their earliest national surveys? One reason, it may be suggested, is that strong monarchies may have perceived less need for secrecy than did the weak and threatened. Certainly, in strongly-centralised Elizabethan England, surviving documents imply few doubts about the wisdom of publishing Saxton's survey.³⁸ From the 1570s Saxton's maps were seen by statesmen such as Burghley as an aid to national administration and defence although a few may have taken a different view.³⁹ Of seventeenth-century France, too, it has been observed how 'maps seem to have functioned in untroubled support of a strongly centralized monarchic regime.'⁴⁰ But such an argument fails to explain all. On the contrary, some of these maps became double-edged weapons. Once generally available, they were used to support other sides in political power struggles. In England, for example, Saxton's maps did not (as had been intended) serve solely to strengthen the power of the monarchy. Once published and in circulation, they would surely also have been a contributory factor in the growth of the strong sense of provincial identity and independence which was so successfully articulated against the crown in the Civil War.⁴¹ Likewise, it has been remarked that in the Low Countries the widespread use of maps went hand-in-hand with the nascent bourgeois republicanism of the seventeenth century.⁴² With such complex, and sometimes contradictory, aspects in mind we can perhaps begin to glimpse

how, for the cautious monarchy determined to preserve its power, map secrecy came to be regarded as a prudent policy of good government.

(ii) Commercial Secrecy

The rise of map secrecy in early modern Europe was also associated with a second theatre of geographical activity—that of commerce and the rise of monopoly capitalism. In a period when the foundations of the European world economy and its overseas empires were being laid,⁴³ absolute monarchs were often also ‘merchant kings,’ pursuing economic objectives through the trade monopolies opened up by their navigations.⁴⁴ As in the case of the nation state, the essence of empire is control. For such commercial monopolies to survive and for the policies of *mare clausum* to be implemented, there had to be a monopoly of the knowledge which enabled the new lands and the routes to and from them to be mapped. Arguably, the process of monopolization of map knowledge paralleled the secreting and use of craft mysteries in the control of medieval guilds.⁴⁵

The mechanism by which vital cartographic information from nascent overseas empires was censored, regulated and secreted varied considerably. In some countries, it was an *ad hoc* process linked to individual voyages. This seems to have been the case in England where contemporary writers on the navigations were aware of the practice of censorship⁴⁶ and knew that new knowledge was controlled in a few powerful hands, those of the sovereign, an inner circle of ministers, or the principal merchants and navigators involved with a venture. For example, the sketch maps and drawings brought back by Drake’s voyage round the world (1577–80) became secret documents. Drake had been given express orders that ‘none shall make any charts or descriptions of the said voyage,’ a prohibition of publication that was to remain in force until 1588. (Fig. 1)⁴⁷

Much more elaborate were the bureaucratic systems set up by the crowns of both Portugal and Spain to regulate the overseas trade and the knowledge on which it depended. Maps quickly became key documents in the launching of the Luso-Hispanic empires. While both the extent to which the Portuguese policy of secrecy actually existed and its effectiveness have been the subject of heated debate,⁴⁸ the evidence does suggest the length to which a self-interested and powerful monarchy might go to control and suppress sensitive maps. For instance, the penalty for pilots giving or selling charts to foreigners was to be death.⁴⁹ Measures were taken, late in the fifteenth century, by John II of Portugal (1481–1495) to exclude foreigners, especially Genoese and Florentines, from all Portuguese territory, while the Cortes of 1481, in relation to the West African navigation, is said to have

‘demanded severe measures for maintaining the secret of the discovered lands. The documents were sequestered; to record new lands on the maps was forbidden; the nautical works became secret books; prohibitory tales were spread; and the navigators forced to keep the oath of silence.’⁵⁰

By the beginning of the sixteenth century, Portuguese controls on cartographic knowledge had been further tightened by the establishment of a ‘hydrographical repository’ within the ‘Storehouse of Guinea and the Indies’ (*Armazem da Guine e Indias*).⁵¹ This clearly exercised censorship functions. A royal charter of 13 November 1504 prohibited the making of globes and forbade nautical charts to depict the West Africa coast beyond the river Congo. Charts not complying with this provision were required to be taken to an officer of the hydrographical repository to be cleansed of such details. Moreover, such an organization made it possible to insist that nautical charts issued before a voyage were handed back on its completion while the duty of another official was to screen intended recipients lest there might be objections to their handling of charts.⁵² Contemporaries alleged the deliberate falsification of charts: it is easy to see how it could have come about in both Portugal and Spain.⁵³

The objectives of state control of overseas cartographic knowledge and the regulating mechanisms in Spain were much the same as in Portugal. The Castilian court had set up a special institution in the first decade of the sixteenth century called the *Casa de Contratación* (colonial office in control of shipping, commerce and finance, probably based on the Portuguese model), to oversee exploration and to house, in secrecy, documents of discovery.⁵⁴ By

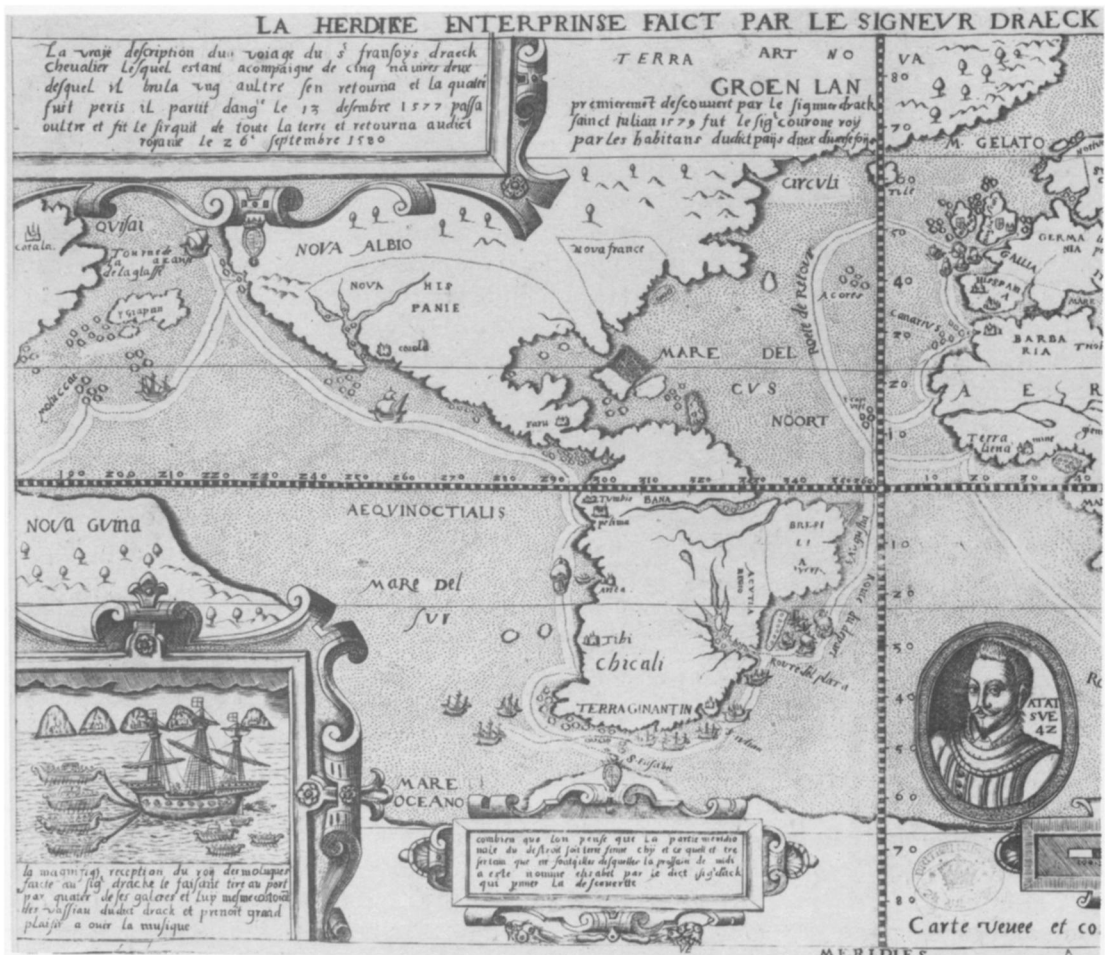


Fig. 1 Part of the world map by Nicola van Sype, showing Drake's circumnavigation and engraved and published at Antwerp, ca. 1583, was probably an unauthorised copy, made from a secret English original and smuggled out of the country. *By courtesy of the British Library (Maps C2.a.7).*

1508 a special geographical and cosmographical department had been created within the *Casa*. It was here that a master world map, the *Padrón Real*, was kept up-to-date by trained chart-makers.⁵⁵ The *Casa*'s many provisions included the instructions that

'Pilots were not to be permitted to make use of any other maps than this, and they were directed, upon finding new islands or lands, new ports or bays, or any other thing—currents or tides, headland or mountains—which might serve the purpose of subsequent identification of localities, to enter the same in the copy of the *Padrón Real* which they carried, reporting all entries made on return, but nothing should be inserted that was not properly attested and sworn to.'⁵⁶

The situation in both Portugal and Spain early in the sixteenth century suggest that the rulers of the nation states of Europe, together with their rising bourgeois merchant classes, were not slow in discovering the value of centralized control in trying to ensure the confidentiality of geographical knowledge about the New World. Rivals of Portugal and Spain copied their navigational institutions. The hydrographic office established at Amsterdam, after the organization of the Dutch merchant companies into the United East India Company in 1602, paralleled the *Casa da Contratación* in a number of ways, including the institutionalization of a secret cartography.⁵⁷ Each chartmaker in the Dutch East India Company

'was . . . obliged to ensure that the logs from arriving vessels were delivered in good order, and did not fall into the wrong hands. He had to file them in a special room in East India House and had also to keep proper records.

Every six months he had to account for all the improvements he had made in the charts and rutters. The chart-maker was sworn not to disclose any information about his activities to persons not in the employ of the company. He was not allowed to publish, directly or indirectly, any of the company's material without the company's knowledge and comment, and every newly appointed chart-maker had to swear before the mayor of Amsterdam that he would obey these instructions.⁵⁸

The Dutch East Company had become, in effect, the state's surrogate organ, acting as a ministry with particular responsibility for the eastern colonies. Its map policy was especially cautious when the handing out of charts of newly-explored regions was in question. The practice was to supply pilots with these in manuscript and as required, and to check their return at the end of a voyage. Company officials, such as Plancius and, later, Blaeu, were expected to exercise tight control, even to the point of censoring maps intended for publication. Consequently, maps associated with important voyages, such as those of Tasman to Australia, were effectively being kept secret. (Fig. 2).⁵⁹

Nor were the Dutch monopoly companies alone in adopting such restrictive cartographic practices. In seventeenth-century England, after the Restoration, as trading companies became increasingly monopolistic in structure so they also tended to act as a brake on map publication, if not map-making itself.⁶⁰ Once the Hudson's Bay Company (founded in 1670) had acquired its territorial monopoly, its substantial archive—including all the maps—remained all but closed until the late-eighteenth century because of the Company's restrictive policies.⁶¹ These policies meant in practice that the Company 'did not allow details of the geographic pattern of riverways, lakes, and the terrain to become known' for the simple reason that 'such geographic data were considered crucial to the formulation and operation of its trading policies, and thus were commercial secrets.'⁶² Particularly interesting is the way the English parliament reacted when faced with these policies. Even when opportunities presented

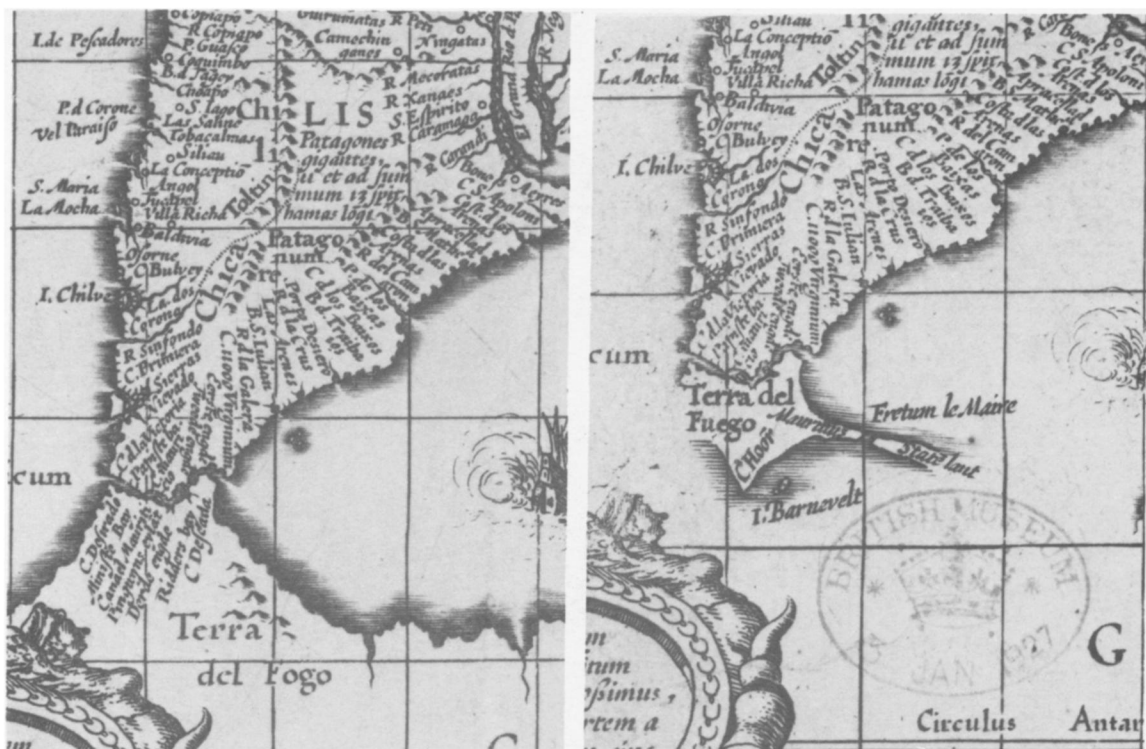


Fig. 2 Tierra del Fuego on two states of Blaeu's *Nova Orbis Terra* (left 1606/1617; right after 1618). Knowledge, available in 1617, on the Straits of Magellan from le Maire's voyage was censored for commercial reasons until after 1618 (see Tony Campbell in reference 59). By courtesy of the British Library (*Maps* 920 (262) and *Maps* 188j.1(i)).

themselves to legislate against these practices it was unable to assert itself as the disinterested patron of a 'scientific' knowledge expressed through geographical maps.⁶³

Thus the forces impinging upon the cartography of early modern Europe were much more complex than the initially simple notion of power-knowledge allows for. A number of characteristics can be observed. For instance, while it can be claimed that secrecy has been endemic in the history of maps and map-making as well as in the activities of monopoly capitalism, there has been nothing neat or predictable in the timing or the geographical pattern of its imposition. We find that some periods are characterized by 'high security' while in others this has been allowed to slip. When the world limits of the Spanish and Portuguese empires were being demarcated, between about 1515 and 1529, control over secrecy was rigorously enforced but later in the century laxity crept in. (Fig. 3). Another point is the way state policies have been inconsistent. Despite Spain's usual preoccupation with secrecy and control, cartographic caution was thrown to the winds when Charles V of Spain wished to impress foreign crowns with propaganda maps showing the territorial extent of Spanish influence.⁶⁴ Nor were the manipulations of one state always meekly accepted by its rivals. These sought to obtain maps as much by espionage,⁶⁵ theft and piracy as by direct observation and their own survey. So, Walter Raleigh's collection of New World maps, which had come mainly from Spanish sources, included 'a secret mappe of those partes made in Mexico . . . for the King of Spaine.'⁶⁶ Moreover, the strictest policies of cartographic secrecy could be undermined by the ease with which cosmographers and pilots, taking with them their specialist cartographic knowledge, entered the service of rival crowns. There are well-known cases of Portuguese pilots being lured

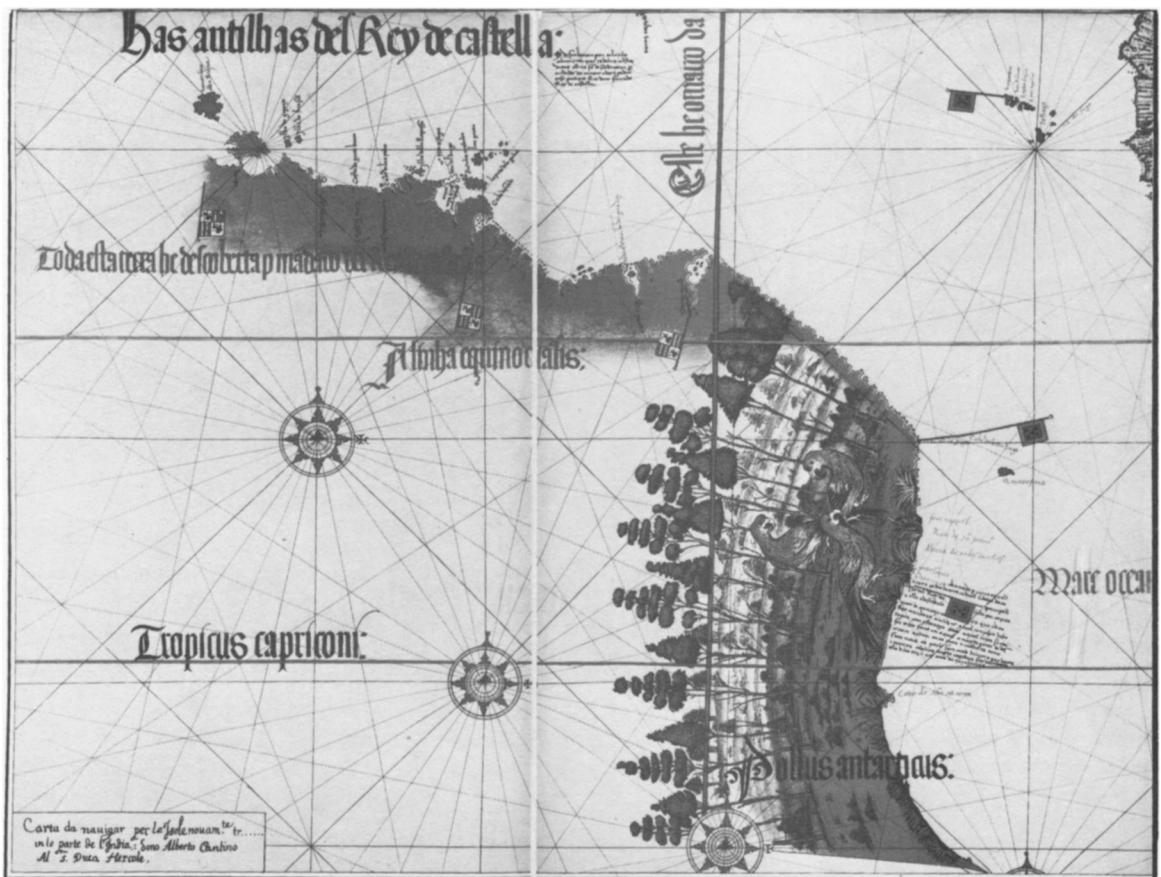


Fig. 3 Brazil on the Cantino Chart, 1502. Anxiety about the Italian spice trade led the Duke of Ferrara to obtain by bribery this map of the 'islands recently discovered in the . . . Indies' from a Portuguese original in Lisbon, from H. Harrisse's facsimile in *Recueil de voyages et de documents pour servir à L'Histoire de la Géographie No 3 Les Corte-Real et leurs voyages au Nouveau-Monde*. (Paris 1883). By courtesy of the British Library (Maps 7.e.8).

into the more lucrative service of Spain, France or England while cartographers such as Cabot, Ribeiro, and Rotz are known to have been the agents by which once confidential maps were given wider currency. Even the *Padrón* of Spanish navigation did not remain secret for ever and its contents were eventually published. Finally, and yet more remarkable, perhaps, were the occasions when ideological conflicts about secrecy emerged in the very institutions set up to enforce it. It has been shown, for example, how there was a protracted debate and even litigation within the *Casa da Contratación* over the role of patriotism in scientific argument and the role of secrecy in the growth of knowledge.⁶⁷ In view of all this, we have to conclude that access to knowledge must be regarded as one of the more complex socio-legal dimensions that structured the development of cartography in early modern Europe.

Epistemological or unintentional silences on maps

A second category of silence on maps is the unintentional silence. This is a silence that does not seem to have been ‘explicitly commanded’ by the cartographic patrons of early modern Europe yet that was nonetheless instrumental in the diffusion of state power.⁶⁸ What commanded the unintentional silence was ‘the play of rules which determines within a culture the appearance and disappearance of statements’⁶⁹ on maps. So our concern here is with the absence or presence of categories of cartographic detail that cannot be explained by reference to either secrecy or technical factors but by ‘historical rules’ that are not merely theoretical but observable in forms which varied according to the particular ‘social, economic, geographic or linguistic zone’ within which a map originated.⁷⁰ These ‘rules’ help to fashion two sets of discourse, the scientific, and the political-social, whose function is to structure the framework within which cartographic knowledge is created.

(i) The scientific discourse in maps

Already in the Renaissance, two ‘scientific’ characteristics, the ‘universal science of measurement and order’ and the principle of classification or ordered tabulation,⁷¹ were important underpinnings of map content. From then on, increasingly precise instruments of survey and techniques of mapping contributed to the ‘science of measurement’ while the way in which cartographic signs were classified and ordered (i.e. set out in tabulated characteristic sheets)⁷² points to the adoption of the principle of classification. As scientific progress and increasing technical accuracy marched ahead, few doubts were expressed. State cartography was thus, in the sixteenth century, well on the way to becoming a scientific and technological discourse. Contained within it was the unwritten assumption of an objective world in which the new techniques, being repeatable and transmissible, were always able to be successful in measuring or describing accurately.⁷³ Today, many historians still accept this model of scientific progress as the standard interpretation of the rise of state cartography.⁷⁴ Yet of equal interest are the silences on those allegedly ‘objective’ products of state mapping. My contention is that while measurement and classification may have fostered objectivity within the terms of reference of the cultural *episteme*, in other respects the maps still remain a subjective perspective on the world of that culture. Standardization, with its Euclidian emphasis on space as uniform and continuous, generates the silences of uniformity. For instance, in many of the topographical atlases of early modern Europe, especially those of the seventeenth century, but even in Mercator’s and Saxton’s, much of the character and individuality of local places is absent from the map. Behind the facade of a few standard signs on these atlases, the outline of one town looks much the same as that of the next; the villages are more nearly identical and are arranged in a neat taxonomic hierarchy;⁷⁵ woodland is aggregated into a few types; even rivers and streams become reduced into a mere token of reality; objects outside the surveyor’s classification of ‘reality’ are excluded. The epistemological force of scientific procedures was, moreover, intensified by their further standardization through map printing—the innovation which saw the start of ‘the technologizing of the map’—so that the map images acquire a tidiness and inevitability lacking in the manuscript age.⁷⁶ The net result was that the cartographic landscapes of Europe became more generalized, more abstract, and less differentiated in the mode of their representation. Their silences are those of the unique.

It is generally accepted that mapping is an activity designed to promote state efficiency and that with good maps the writ of centralized power can be made to run more uniformly over a country as a whole. But we need to ask ‘Why was it that it had to be scientific mapping that made this task easier?’ If we leave aside all the logistical arguments that have been marshalled in favour of maps—and clearly they persuaded a considerable investment by the rulers of early modern Europe—then there is another side to the explanation: the silences in maps act to legitimize and neutralize arbitrary actions in the consciousness of their originators. In other words, the lack of qualitative differentiation in maps structured by the scientific *episteme* serves to dehumanise the landscape. Such maps convey knowledge where the subject is kept at bay.⁷⁷ Space becomes more important than place: if places look alike they can be treated alike. Thus, with the progress of scientific mapping, space became all too easily a socially-empty commodity, a geometrical landscape of cold, non-human facts.

(ii) The political and social discourse in maps

But not all is explained in this way.⁷⁸ The paradox is that the socially-empty spaces on the map were not without social consequences. Yet other threads weave through map imagery. In particular, there are those of political consciousness, mediated through patronage,⁷⁹ and those of religious values or of social or ethnic attitudes. With the help of these epistemological insights, we can listen to the other silences in our maps.

Political discourse is grounded in an assumption of the legitimacy of an existing political *status quo* and its values. Its utterances through maps as elsewhere, are intended, consciously or unconsciously, to prolong, to preserve and to develop the ‘truths’ and achievements initiated by the founding fathers of that political system or modified by their successors. However, it can be argued that this cognitive infrastructure itself determines the nature of the technical specification of maps and provides the rules of what is included and excluded on a map. It can also be suggested that political discourse is responsible for differential emphases, through selection and generalisation, which privilege some aspects of ‘reality’ while others are silenced. Individual cartographers would not have been in the position to control or balance these nuances, even had they been aware of them.

Examples of many different sorts of political and social silences can be found on maps from the early modern period. One category is the toponymic silence. Conquering states impose a silence on minority or subject populations through their manipulation of place-names. Whole strata of ethnic identity are swept from the map in what amount to acts of cultural genocide. While such manipulations are, at one level, the result of deliberate censorship or policies of acculturation,⁸⁰ at another—the epistemological—level, they also can be seen as representing the unconscious rejection of these ‘other’⁸¹ people by those belonging to the politically more powerful groups.

A similar reading can be made of the silences found in the keys to cartographic signs included on some maps in nearly modern Europe. On Mercator’s map of Europe dated 1554, for example, the map-maker chose to identify four ecclesiastical ranks—the Vatican (*Pontifex Romanus*), the patriarchal sees (*patriarchales*), the archiepiscopal sees (*archiepiscopales*), and bishoprics (*episcopales*)—while remaining silent about the four or five ranks of secular status also differentiated and shown on the maps.⁸² By implication, the political power acknowledged here is the ecclesiastical one; small settlements (villages) at the bottom of the ecclesiastical hierarchy are of no consequence. Silence thus becomes an ‘active performance’ giving affirmative support to the political *status quo*.

In yet another group of examples, we can detect how maps were implicated in a discourse of promise—their silences reciprocating eschatological dimensions in the sacred books of particular sects or religions. Thus, in the depiction of the Holy Land inspired by Luther and Calvin, in which a *geographia sacra* was combined with geographical realism (the latter reflecting the scientific discourse in maps), it is events of the Old Testament and the Protestant message of ‘Salvation History,’ epitomised by the Exodus route, which are emphasized.⁸³ Left silent are the history and sites of New Testament lore which feature so prominently in the *mappaemundi* of the Catholic Middle Ages.⁸⁴

The content and publication of maps may thus be structured by the religious schisms and ideological battles of early modern Europe. The publication of books of town plans of Italy, for example, may have been inhibited in some areas by the aversion of Calvinists to representations of Catholic Rome. Similarly, it may be significant that the ecclesiastic rank of settlements is indicated more frequently on maps of regions south of the Alps (or on the maps of cartographers from countries in which the Roman Catholic Church remained in power, such as Italy, Spain and France) than in the Protestant regions to the north. In contrast, maps containing information about the different sects and adherences of European Christians were more common north of the Alps, where they reflected the religious turmoil of the Reformation, about which maps from the Catholic heartlands of Italy, France and Spain remained silent.⁸⁵ Sectarian splits are sometimes discernible in maps whose authors were hotly partisan to one doctrine, for instance through the map's silence about the churches and settlements of the other.⁸⁶ (Fig. 4). On yet other maps, including portolan charts, lands which the Ottomans had conquered were shown as if still in Christian hands, while Jerusalem was often depicted as Christian on some of the maps of the Middle Ages long after its fall to Islam.⁸⁷

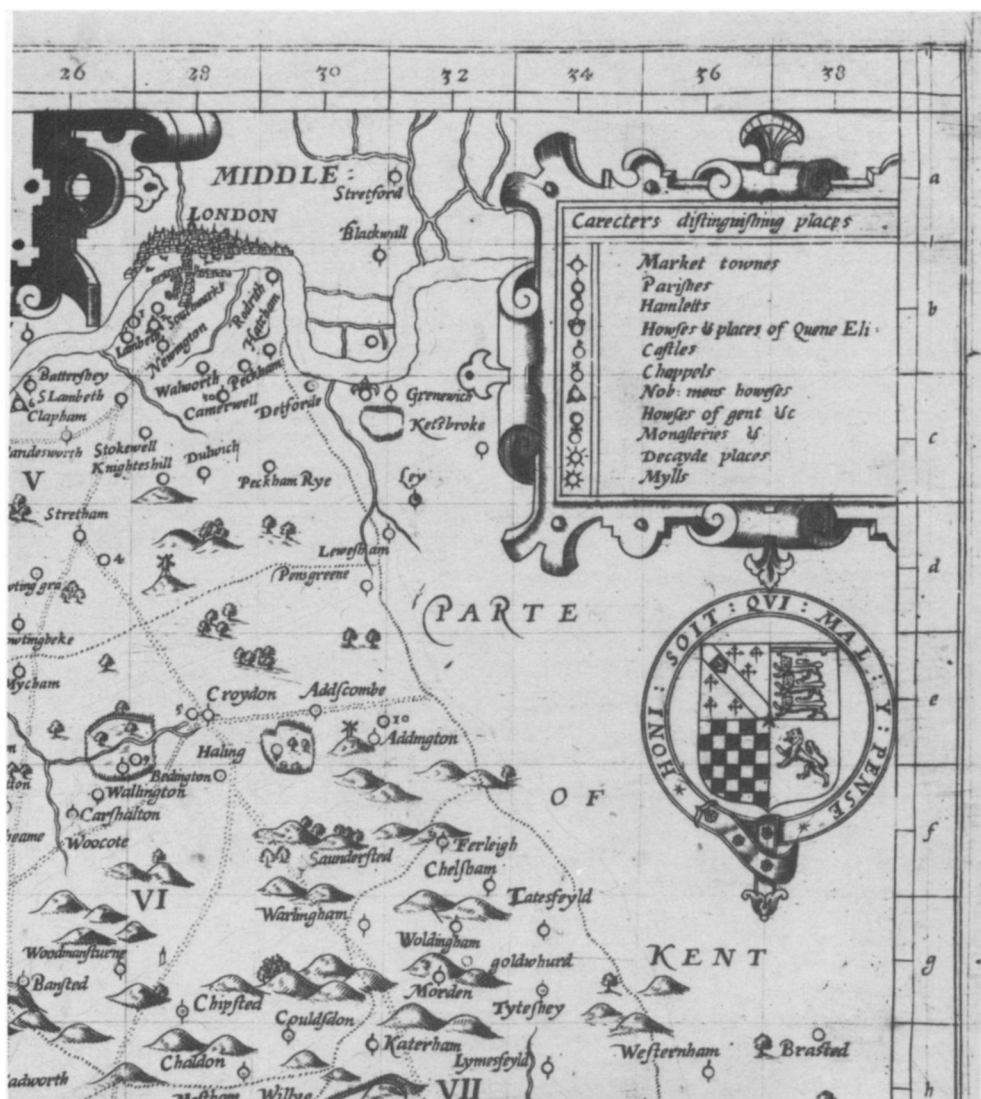


Fig. 4 Part of John Norden's Surrey, 1594. It has been argued that Norden being anti-Catholic, omitted 'Bishop's Sees' from his map. The only one of his maps to show them, Middlesex, 1593, marks by a star rather than a Papists' cross). 'Chappels' (chapels-of-ease) make their appearance, reflecting Norden's attention to ecclesiastical detail. *By courtesy of the British Library (Maps C7c5 (44)).*

The first problem encountered in attempting to integrate the silences in European maps that might have arisen from contemporary perceptions of class or race is the tendency to assume that these perceptions would have been identical amongst all Europeans and throughout the sixteenth or seventeenth century. Even so, it is reasonable to suggest that there was a common conceptual base to European society of the time. For instance, social status and the nature of men's occupation were matters of deep concern both in feudal central Europe and amongst the rising middle ranks or *grande bourgeoisie* of other states which would have influenced map knowledge. Witness the careful ranking of the costumed figures that so often compose the marginal decoration of late-sixteenth and seventeenth century maps such as those of Speed and Blaeu, for instance.⁸⁸ While those social distinctions are easily discerned, others may be more subliminal. But the same sort of social taxonomy seems to have underlain the silence in European cartography about the majority social class. For map makers, their patrons, and their readers, the underclass did not exist and had no geography, still less was it composed of individuals. Instead, what we see singled out on these maps are people privileged by the right to wear a crown or a mitre or to bear a coat of arms or a crozier. The peasantry, the landless labourers, or the urban poor had no place in the social hierarchy and, equally, as a cartographically disenfranchised group, they had no right to representation on the map. Credentials of social status which gave an individual the right to hold land, also conferred the right to appropriate the most prominent signs in the map-maker's repertoire. The largest (and most eye-catching) pictorial signs on the map turn out to be those associated with feudal, military, legal or ecclesiastical status. A peasant village, lacking strong overlordship or church patronage, recedes into the near-silence of an abstract dot or sign. Moreover, these European notions of status were carried into the New World. They are discernible on, in particular, maps of regions where the European culture encountered the Indian culture. They are found, for instance, on maps showing the early English settlement of Virginia. Here the distinction between Indians of the 'better sort' and the common Indian people, frequently made by contemporary writers,⁸⁹ is conveyed (as on European maps) by representations of individuals from the privileged upper stratum of Indian society—a Powhatan, Pocahontas or Susquehanna chief, for example—while the ordinary men and women are shown massed anonymously at their feet and, by implication, at their command. Likewise, European hierarchies are found in the settlement signs of maps of the New World. For the two hundred or so Indian settlements that are depicted on John Smith's map of Virginia (1612), a careful distinction is made between 'Kings Houses' (drawn with a visually prominent sign), and 'ordinary Houses' (marked by a relatively insignificant sign), and chief Powhatan's settlement (given the largest sign of all).⁹⁰

Another type of silence found on maps of the New World arises from the tendency to obliterate the uniqueness of the American landscape in favour of a stereotype, a tendency that is more difficult to explain. It could be, of course, simply the result of a lack of information. Faced with empty spaces on the sketches and drafts they were given as models, European engravers would have filled these with the only landscape conventions familiar to them. Alternatively, the stereotype of the American landscape can be seen as a deliberate act of colonial promotion, designed to make the new lands more attractive to settlers or to tempt proprietors and potential investors.⁹¹ But we may also seek explanations of these silences in another direction, at the structural level of Foucault's *epistemes*. Thus, they would be manifestations of yet another way European scientific values were reflected in Renaissance cartography through, especially, measurement and simple landscape classification. So, we could be witnessing here, once again, the unconscious transposition into American geography of European values and preferences, this time in relation to the landscape. Maps such as those of John Smith ('Lord Baltimore's Map,' 1635) or William Wood ('The South Part of New England,' 1634),⁹² seem to show us an already-tamed wilderness, one that has been rendered more acceptable to English eyes. (Fig. 5). There may be a parallel here to the way Theodore de Bry and his assistants transformed John White's paintings of Indians in the Roanoke Colony. We have been told how de Bry 'retained White's meticulous attention to detail in dress, hair style, and body decoration, but changed the faces, postures, and bodies of the Indians in dramatic ways'



Fig. 5 Captain John Smith's map of Virginia. William Hole's engraving constructs a landscape with hills, rivers, woods and settlements recognisable to eyes familiar with the English county maps of the period. With the royal coat of arms inserted as an emblem of colonial possession beneath the title scroll we see the beginning of a cartographic discourse which ends with maps silent about Indian rights to the territory. The 1625 edition is shown here. *By courtesy of the British Library (Maps 75005(9)).*

and how their 'faces were sweetened, softened, and Europeanized' so that, with their 'new high foreheads, puckered mouths and ringleted hair they resemble the classical figures in the German engraving tradition'.⁹³ So, too, it seems to have been with the landscape in some of the earliest and most influential printed maps of the regions of North America. In essence, these maps depict a European landscape in European engraving style but far from being actual portraits of America, they really show landscapes whose advent Europe desired and they remain silent about the true America. This sort of cartographic silence becomes an affirmative ideological act. It serves to prepare the way for European settlement. Potential settlers see, on the map, few obstacles that are insurmountable. Least of all does the map reflect the presence of indigenous peoples and their imprint on the land: 'It is as if America were a stage tableau, with the arrival of Europeans as the raising of the curtain and the beginning of action.'⁹⁴ In short, such maps are ethnocentric images, and part of the apparatus of cultural colonialism. It is not only that they offer a promise of free and apparently virgin land—an empty space for Europeans to partition and fill—but that the image offered is of a landscape in which the Indian is silent⁹⁵ or is relegated, by means of the map's marginal decoration, to the status of a naked cannibal.⁹⁶ Through these silences, the map becomes a license for the appropriation of the territory depicted. It is yet another means by which to insist upon the inherent superiority of European technologies and European ways of life.

Conclusions

This essay was designed to illustrate the potential for a history of maps of ideas derived from outside our subject. It has been primarily a theoretical exploration. It should be made clear, however, that neither concepts such as that of power-knowledge nor that of the *episteme* can offer 'provable' generalizations which can be neatly plugged into the 'facts' for this or that map culture. My argument stems from a humanistic standpoint, that it is the role of theory to reveal the complexity of the world rather than to reduce it to the simpler models of the social scientist. Thus, our first conclusion is that, while initially simple and familiar, the notions of power-knowledge and of cartography as a discourse of power with social effects are immensely complex once we start to relate them to specific historical contexts. Faced with a particular map, it is often hard to tell from the historical context whether its silences are the result of deliberate acts of censorship, unintentional epistemological silence, or a mixture of both, or perhaps merely a function of the slowness with which cartographers revised their maps to accord with the realities of the world. The relationships between maps and power, and between maps and other forms of knowledge, were constantly changing. The contribution of cartography in the maintenance of authority throughout the sixteenth and seventeenth centuries was never a constant factor. The complexities were recognized by Helgerson who pointed out that maps could never be ideologically neutral, whatever their use or the consequences of their use and that they could never be 'mere tools' whether of monarchic centralism or any other organization of power. They inevitably entered, he said, 'into systems of relations with other representational practices and, in so doing, altered the meaning and authority of all the others.'⁹⁷ It is this constantly shifting terrain between maps and other forms of power-knowledge which still has to be charted within the history of cartography.

A second conclusion is that we are on much surer ground when it comes to the importance of silences. Assuming the world to be a place where human choice is exercised, the absence of something must be seen to be as worthy of historical investigation as is its presence. So it is with cartography. Recently it has been suggested that 'the map that is not made . . . warrants as much attention as the map that is made.'⁹⁸ This aphorism can be extended both into the history of map production and into the history of the representational silences in particular maps. We have been able to show, from particular maps, that deliberate acts of censorship and secrecy in the past have indeed resulted in detectable cartographic and historical consequences. But the same is true of the epistemological silences, the 'unthought' elements in discourse.⁹⁹ These are also affirmative statements, and they also have ideological consequences for the societies in question. Such silences also help in the reproduction, the reinforcement, and the legitimation of cultural and political values. Finding them expressed geographically on maps points to their

universality. There is no such thing as an empty space on a map. Revealed by a careful study of the cartographic unconscious and its social foundations, these hidden agenda have much to offer historians of cartography in coming to an understanding of how maps have been—and still are—a force in society.

The third, and final, conclusion concerns the nature of cartography itself as a form of knowledge. Cartographers may continue to masquerade their products solely in terms of the application of a technical specification—survey instruments, scale, generalization, design, printing, and so forth—but an integral place in the historical interpretation of maps must also be demanded for the cultural choices that were taken for granted in particular societies. Indeed, maps are being read as literary texts¹⁰⁰ rather than as a mechanical replication of technical processes, by an increasing number of scholars. Such an approach has much to commend it, not least as applied to maps of the early modern period.¹⁰¹ Maps are, in the apt phrase of one cartographer, best viewed as ‘a controlled fiction.’¹⁰² This textual viewpoint—reading the map as rhetoric—has important implications for alternative ways in which maps can be used to understand the past. The more we think about the universality of secrecy, of censorship and silence in maps, and the more we continue to reflect upon the epistemological codes of map knowledge, the less convinced we become that map knowledge can be regarded as ‘objective’ or ‘value free.’¹⁰³ Maps became part of ‘an increasing repertoire of power techniques’¹⁰⁴ and it is a major error to conflate the history of maps with the history of measurement. The essential paradox has been missed. As cartography became more ‘objective’ through the state’s patronage, so it was also imprisoned by a different subjectivity, that inherent in its replication of the state’s dominant ideology. The old question of whether particular maps are true or false has not been my concern in this paper. On the contrary, this question has to be downgraded if it is accepted—as I have tried to argue here—that maps are perspectives on the world at the time of their making. My aim in this essay has been to initiate the interrogation of maps as *actions* rather than as impassive descriptions and to persuade historians of cartography to ask the crucial question ‘What are the “truth effects”’ of the knowledge that is conveyed in maps,¹⁰⁵ both of its more emphatic utterances, and also of its equally emphatic silences?

Acknowledgements

This paper was given in a preliminary form at a seminar in the Department of Geography, York University, Canada in March, 1987; it was subsequently presented at the Twelfth International Conference on the History of Cartography in Paris in September, 1987 and at the ‘Geography and the Environment Workshop,’ in the University of Chicago, in November 1987; I am grateful for the encouragement and suggestions received on those occasions. I am also indebted to

Howard Deller of the American Geographical Society Collection for crucial bibliographical assistance, to Kevin Kaufman for supplying me with references on the early history of cartographic secrecy in Portugal; to David Quinn for a number of other examples of sixteenth and seventeenth century policies of cartographic secrecy; and to Michael Conzen, Catherine Delano Smith, Richard Eversole, Michael Mikos, Denis Wood and David Woodward for commenting on a draft of the essay.

REFERENCES

1. Harley, J. B., *The map as ideology*, forthcoming.
2. An interesting variant of modern censorship is provided by remote sensing from satellites. The resolution of the instruments used for military intelligence is now so extraordinarily fine that satellites for civilian use (LANDSAT I launched in 1972, and LANDSAT V in 1984) have their imagery deliberately degraded; see: Gould, Peter, *The geographer at work* (London, 1985), 162–63, 211–13. For a shift of policy see: Broad, William J., ‘U.S. ends curb on photographs from satellites’, *The New York Times*, 21 January 1988.
3. For an indication of the importance of this theme see James R. Akerman and David Buisseret, *Monarchs, ministers, and maps: A cartographic exhibit at the Newberry Library* (Chicago: Newberry Library, 1985).
4. Mazzeo, Joseph Anthony, *Renaissance and seventeenth-century studies* (New York, 1964), 148.
5. The word discourse has so many interpretations in linguistic and literary studies that it is necessary to define it here. I take the sense nearest to my own from Hulme, Peter, *Colonial encounters: Europe and the Native Caribbean, 1492–1797* (London, 1986), 2, where he writes of ‘colonial discourse, meaning by that term an ensemble of linguistically-based practices unified by their common deployment in the management of colonial relationships.’ I am also concerned with how ‘linguistically-based practices,’ broadly defined as both verbal and non-verbal language and systems of graphic representation including maps, have been used as political instruments. The sense is, therefore, also that of Michel Foucault, *The archaeology of knowledge and the discourse on language*, trans. A. M. Sheridan Smith (New York, 1972), who is concerned with discourse as a social practice with

- a set of meanings and effects that can be determined within particular historical societies.
6. Silences can be detected, for example, in most of the technical stages of map production modelled by David Woodward: 'The study of the history of cartography: A suggested framework,' *American Cartographer*, 1 (1974): 101–15.
 7. While he did not specify silences, an excellent discussion of the difficulty of assigning the nuances of cartographic representation to particular cultural or technical causes is given by H. R. Wilkinson: *Maps and politics. A review of the ethnographic cartography of Macedonia* (Liverpool, 1951), 314–323.
 8. I have found Bernard P. Dauenhauer's *Silence: The phenomenon and its ontological significance* (Bloomington: Indiana University Press, 1980) to be particularly helpful; see also: Max Picard, *The world of silence*, trans. Stanley Godman (Chicago, 1952). I owe these references to Dr. Walter Mignolo of the University of Michigan, Ann Arbor.
 9. Dauenhauer, *op. cit.*, 23 (n. 8).
 10. *Ibid.*, 4.
 11. See Ihde, Don, *Experimental phenomenology* (New York, 1977) 68, 129.
 12. The 'reader-response' to maps in historical contexts has been neglected: for its place in literary studies see: Iser, Wolfgang, 'The reading process: A phenomenological approach,' in Tompkins, Jane, P. (ed.), *Reader-response criticism. From formalism to post-structuralism*. (Baltimore, 1980), 50–51. The extent to which silences in maps may have stimulated their readers' participation is worth pursuing. While early map-makers—unlike Laurence Sterne in *Tristram Shandy* where the reader is invited to add to the story on a provided blank page (see: Sterne, Laurence, *The life and opinions of Tristram Shandy, Gentleman*, ed. James Aiken Work (New York, 1940), 470—may not have generally envisaged such participation, it is possible to investigate its historical effects in the social construction of *terrae incognitae*. I owe the references in this note to Dr. Richard Eversole.
 13. The negative—even derisive—attitude towards blank spaces on maps was already well established by the eighteenth century most famously in Jonathan Swift, *On poetry: a rhapsody* (London, 1733), 12 in his well-known lines beginning 'So geographers in *Afric*-maps . . .' For a modern continuation see Lewis Carroll, 'Bellman's map', *The hunting of the snark*, quoted by R. A. Skelton in *Looking at an early map* (Lawrence, Kansas, 1965), 3.
 14. Dauenhauer, *op. cit.*, 4 (n. 8).
 15. Recent anthropological research, revealing different cultural and contextual interpretations given to silence in speech patterns, can serve as a preliminary warning about the danger of over-generalizing about the silences in maps. See, for example, Basso, K. H., "'To give up on words": silence in Western Apache culture,' in *Language and social context: Selected readings*, ed. Pier Paolo Giglioli (London, 1972), 67–86. For a sociolinguistic example see: Coates, Jennifer, *Women, men and language: A sociolinguistic account of sex differences in language* (London, 1986), 33–34. I owe these references to Dr. Michael Mikos.
 16. For an earlier step see; Harley, J. B., 'Maps, knowledge and power,' in Cosgrove, D. and Daniels, S. J., (eds.), *The iconography of landscape* (Cambridge, 1988), 277–312.
 17. Among Foucault's commentators and critics I have found to be particularly helpful for this paper Merquior, J. G., *Foucault* (Berkeley, California, 1985) and Poster, Mark, *Foucault, Marxism and history: Mode of production versus mode of information* (Cambridge, 1984).
 18. Foucault, Michel, *Discipline and punish: the birth of the prison*, trans. Alan Sheridan (New York, 1977), 27.
 19. Foucault, Michel, *Power knowledge: Selected interviews and other writings 1972–1977*, ed. Colin Gordon; trans. Colin Gordon, Leo Marshall, John Mephram, Kate Sopher (New York, 1980), 74–75, during the interview "Questions on Geography".
 20. Foucault, *op. cit.*, 216(n. 5).
 21. 'Discourse' here being a word for thought and knowledge as a social practice: Merquior, *op. cit.*, 18 (n. 17).
 22. Foucault, Michel, *The order of things: An archaeology of the human sciences*, trans. Alan Sheridan-Smith (New York, 1970), *Preface*.
 23. *Ibid.*, xxii, Foucault also argues that the *episteme* 'defines the mode of being of the objects that appear in that field, provides man's everyday perception with theoretical powers, and defines the conditions in which he can sustain a discourse about things that is recognized to be true.'
 24. *Ibid.*, xxii.
 25. For literary parallels to cartographic censorship, which help us to view its practice as taken for granted rather than exceptional in early modern Europe, see: Patterson, Annabel, *Censorship and interpretation. The conditions of writing and reading in early modern England* (Madison, 1984).
 26. See, for example, Needham, Joseph, and Ling, Wang, *Science and civilization in China*, vol. 3, *Mathematics and the sciences of the heavens and the earth* (Cambridge, 1959), 193; Harley, J. B. and Woodward, David, (eds.), *The history of cartography*, vol. I, *Cartography in prehistoric, ancient, and medieval Europe and the Mediterranean* (Chicago, 1987), 254; and Davenport, William, 'Marshall Islands navigational charts,' *Imago Mundi* 15 (1967), 19–26.
 27. In terms of Foucault, *Discipline and Punish*, (23 n), 18, it was also a 'technology of power' closely enmeshed with the will to dominate in both domestic and overseas spheres. See also Akerman and Buisseret, *op. cit.*, *passim* for examples of an increasing use of maps by the emergent states as tools of government.
 28. Mukerji, Chandra, 'Visual language in science and the exercise of power: the case of cartography in early modern Europe,' *Studies in visual communication* 10, n. 3. (1984), 30–45; Sack, Robert David, *Human territoriality: its theory and history* (Cambridge, 1986).
 29. See: Mann, Michael, *The sources of social power*, vol.

- 1, *A history of power from the beginning to A.D. 1760* (Cambridge, 1986), 8, where he distinguishes between 'authoritative power,' which 'comprises definite commands and conscious obedience' and 'diffused power' which 'spreads in a more spontaneous, unconscious, decentered way . . . not explicitly commanded.' My *intentional* and *unintentional* silences in maps can be allocated to this broad distinction.
30. Spence, Jonathan D., *The memory palace of Matteo Ricci* (London, 1984), 97.
 31. For example, in England, the crown had fully grasped the strategic importance of maps by the mid-sixteenth century. In 1551, for example, a chance visit to Portsmouth by a French ambassador en route for Scotland, in the company of an engineer/map-maker, was sufficient to alarm the English authorities into ordering the re-fortification of its castle: *The chronicle and political papers of King Edward VI*, ed. Jordan, W. K., (London, 1966), 97 (26 December 1551). I owe this reference to Peter Barber. In France, the models in the *Musée des Plans-Reliefs*, first constructed after 1668 for Louis XIV, were kept locked away in the Great Gallery of the Louvre and 'few visitors were allowed to see them because examination by a potential enemy could have threatened military security': Rothrock, George A., 'Maps and models in the reign of Louis XIV,' *Proceedings of the annual meeting of the Western Society for French History* 14 (1987), 50; also Konvitz, Josef W., *Cartography in France 1660-1848: Science, engineering, and statecraft* (Chicago, 1987), 93. The same was true of other maps prepared for military purposes. Geoffrey Parker cites the case of the Duke of Alva who had a map of the Franche-Comté made for his pioneer march of 1567 but this was so accurate that he delayed its publication for a decade. See: Parker, Geoffrey, *The army of Flanders and the Spanish Road 1567-1659. The logistics of Spanish victory and defeat in the Low Countries' Wars* (Cambridge, 1972), 83.
 32. Keuning, Johannes, 'Isaac Massa, 1586-1643,' *Imago Mundi* 10 (1953), 66-67; Bagrow, Leo, *A history of Russian cartography up to 1800*, ed. Henry W. Castner (Wolfe Island, Ontario, 1975), 51.
 33. Bagrow, *op. cit.*, 4-7, (n. 32).
 34. Jager, Eckhard, *Prussia-Karten 1542-1810. Geschichte der Kartographischen Darstellung Ostpreussens vom 16. bis zum 19. Jahrhundert. Entstehung der Karten-Kosten-Vertrieb. Bibliographischer Katalog* (Weissenhorn, 1982), 168-71.
 35. Valerio, Vladimiro, 'The Neapolitan Saxton and his survey of the Kingdom of Naples,' *The Map Collector* 18 (1982), 14-17. The survey, intended to be produced as an atlas, remained unpublished because it was perceived as a threat to both the interests of Spain and the security of the Kingdom.
 36. Akerman and Buisseret, *op. cit.*, 9 (n. 3), although this is debated.
 37. Eduard Imhof, *Cartographic relief presentation*, ed. H. J. Steward (Berlin, New York, 1982), 7.
 38. Skelton, R. A., *Saxton's survey of England and Wales. With a facsimile of Saxton's wall-map of 1583* (Amsterdam, 1974), 15-18.
 39. William Lambarde, the sixteenth-century English historian, for example, had encountered opposition to the publication of a map of beacons in Kent, See: William Lambarde, *A perambulation of Kent* (1596), p. 69, where he wrote 'And now, if any man shall thinke that this laying open of the Beacons, is a point not meete to bee made publike: I pray him to give me leave to dissent in that opinion from him. For, as the profit to the Realme and subiect is manifest, in that it speedeth the service, where speed is the most profitable: so there is no secret hereby disclosed, whereof the enimie may take advantage.'
 40. Helgerson, R., 'The land speaks: Cartography, chorography, and subversion in Renaissance England,' *Representations* 16 (1986), 51-85.
 41. Morgan, Victor, 'Lasting image of the Elizabethan era,' *The Geographical Magazine* 52 (1980), 401-08.
 42. Helgerson, *op. cit.*, 81. (n. 40).
 43. Wallerstein, Immanuel, *The modern world-system I Capitalist agriculture and the origins of the European world-economy in the sixteenth century* (New York, 1974). *Ibid.*, *The modern world-system II Mercantilism and the consolidation of the European world economy, 1600-1750* (New York, 1980).
 44. Cortesão, Jaime, 'The pre-Columbian discovery of America,' *The Geographical Journal* 89 (1937), 29-42.
 45. Mukerji, Chandra, *From graven images: Patterns of modern materialism* (New York, 1983), 91.
 46. See, for example, Richard Eden's statement in the mid-sixteenth century: 'As touching these trades and voyages, as in manner of all the sciences, there are certain secrets not to be published and made common to all men.' Quoted by E. G. R. Taylor, in 'John Dee and the map of North-East Asia,' *Imago Mundi* 12 (1955), 103; also Best, George, *A true discourse of the late voyage of discoverie, for finding a passage to Cathaya, under M. Frobisher, General* (London, 1578); and Richard Hakluyt who refers to a forthcoming 'very large and most exact terrestriall Globe, collected and reformed according to the newest, secretest, and latest discoveries, both Spanish, Portugall, and English' in *The principal navigations voyages and discoveries of the English nation. A photo-lithographic facsimile with an introduction by David Beers Quinn and Raleigh Ashlin Skelton and with a New Index by Alison Quinn*, imprinted at London, 1589 (Cambridge, 1965), xlviixl-xlix.
 47. Wallis, Helen, 'The cartography of Drake's voyage,' in Thrower, Norman J. W., (ed.), *Sir Francis Drake and the famous voyage, 1577-1580. Essays commemorating the quadricentennial of Drake's circumnavigation of the Earth* (Berkeley, California, 1984), 121-163.
 48. Diffie, Bailey W., 'Foreigners in Portugal and the "Policy of Silence", *Terrae incongnitae* 1 (1969), 23-34; see also: Cortesão, Armando, *History of Portuguese Cartography*, 2 vols. (Coimbra, 1969-71), II, 76, 116-18.

49. Wallis, Helen (ed.), *The maps and text of the Boke of idography presented by Jean Rotz to Henry VIII now in the British Library* (Oxford, 1981), 40.
50. Cortesão, 'The pre-Columbian discovery of America,' 31 (n. 44); see also, Kimble, George H., 'Portuguese policy and its influence on fifteenth century cartography,' *Geographical Review* 23 (1933), 653–59.
51. Teixeira da Mota, A, 'Some notes on the organization of hydrographical services in Portugal before the beginning of the nineteenth century,' *Imago Mundi* 28 (1976), 51–60.
52. *Ibid.*, 53–54.
53. Stevenson, Edward L., 'The geographical activities of the Casa de la Contratación,' *Annals of the Association of American Geographers* 17 (1927), 39–59.
54. Parry, J. H., *The Spanish seaborne empire* (London, 1966), 54–58.
55. Stevenson, *op. cit.*, 41 (n. 53).
56. *Ibid.*, 42.
57. Destombes, Marcel, *Cartes Hollandaises: La cartographie de la compagnie des Indes orientales, 1593–1743* (Saigon, 1941), 5.
58. Schilder, Gunter, 'Organization and evolution of the Dutch East India Company's Hydrographic Office in the seventeenth century,' *Imago Mundi* 28 (1976), 61–78.
59. I owe this point to Professor David B. Quinn: on the so-called 'Secret atlas of the East India Company' see: Wieder, F. C., *Monumenta Cartographica*, V (The Hague, 1933), 145–95. See also Campbell, Tony, 'A descriptive census of Willem Blaeu's sixty-eight centimetre globes,' *Imago Mundi* 28 (1976), 21–50, esp. 27.
60. Crone, G. R. and Skelton, R. A., 'Collections of voyages and travels, 1625–1846,' in Lynam, E. (ed.), *Richard Hakluyt and his successors* (London, Hakluyt Society, 1946), 65–140, esp. 67.
61. Moodie, D. W., 'Science and reality: Arthur Dobbs and the eighteenth-century geography of Rupert's Land,' *Journal of Historical Geography* 2, (1976), 293–309; Williams, Glyndwr, 'The Hudson's Bay Company and its critics in the eighteenth century,' *Transactions of the Royal Historical Society*, 5th Series, 20 (1970), 150–51.
62. Ruggles, R. I., 'Governor Samuel Wegg: intelligent layman of the Royal Society,' *Notes and Records of the Royal Society of London* 32 (1978), 181–99.
63. Williams, *op. cit.*, (n. 61).
64. I owe this point to Professor David B. Quinn.
65. See, for example, Cortesão, Armando, in *Cartografia e Cartógrafos Portugueses dos séculos XV et XVI* (Lisbon: Edição da "Seara Nova, 1935), I: 142–44, describes the acquisition of the Cantino map by the Duke of Ferrara. Alberto Cantino was sent to Lisbon under cover to obtain information on the progress of the Portuguese discoveries. In 1502, a letter from Cantino to the Duke states that he had bribed a Portuguese map-maker, probably one connected to the *Casa da Índia*, with twelve gold *ducados* to copy a map, probably the official *padrão*. Cantino left Lisbon with the planisphere at the end of October 1502, and through the intermediary of Francesco Cataneo, the duke had the map in his library by December. I owe this reference to Kevin Kaufman.
66. Skelton, R. A., 'Raleigh as a geographer,' *Virginia Magazine of History and Biography* 71 (1963), 131–49.
67. Lamb, Ursula, 'Science by litigation: A cosmographic feud,' *Terrae incognitae* 1 (1969), 40–57.
68. Following the distinction of Mann, Michael, *Sources of social power*, 8 (n. 29).
69. Foucault, Michel, 'Réponse au cercle d'épistémologie,' *Cahiers pour l'analyse* 9 (Summer 1968), quoted by Merquior, *op. cit.*, 81 (n. 17).
70. Foucault, *Archaeology*, 153–4 (n. 5), for a fuller discussion of the concept of the *episteme* as it relates to social constraints on the creation of knowledge.
71. Merquior, *op. cit.*, 46 (n. 17); these two characteristics comprise what Foucault termed the 'classical *episteme*.'
72. The appearance of the characteristic sheet on maps offers a diagnostic criterion for the formalization of this taxonomic tendency: see E. M. J. Campbell, 'The development of the characteristic sheet, 1533–1822,' *Proceedings of the VII General Assembly—XVIIth Congress—of the International Geographical Union* (Washington, 1952), 426–30. For other aspects of the early history of adoption of this device see Catherine Delano Smith, 'Cartographic signs on European maps and their explanation before 1700,' *Imago Mundi* 37 (1985), 9–29.
73. These are, in effect, the assumptions of 'normal science' and they represent an important epistemological thread in the development of cartography.
74. For an earlier statement of this view see Crone, Gerald R., *Maps and their makers: An introduction to the history of cartography*, 1st ed. (London, 1953), xi. Crone writes that 'the history of cartography is largely that of the increase in the accuracy with which . . . elements of distance and direction are determined and . . . the comprehensiveness of the map content.' That the interpretation persists is demonstrated, for example, by the Foreword by Emmanuel Le Roy Ladurie to Konvitz, *op. cit.*, xi–xiv, where he writes in terms of concepts such as 'enormous progress,' 'Realistic understanding of space,' 'perfection of terrestrial concepts' and concludes that 'The progress of French cartography at the time of the Enlightenment was linked to collaborations between state and science' yet without, in the main, pursuing the ideological implications of the state interest in mapping.
75. See Campbell, E. M. J. Figure 2, (n. 72).
76. For the effects of print culture on social thought with relevance to the argument in this paper see: Ong, Walter J., *Orality and literacy: The technologizing of the word* (London, 1982), esp. 117–23.
77. Foucault sees this as inherent in the process of graphic representation: see Merquior, *op. cit.*, 46–47 (n. 17); Sack, *Human territoriality*, 131, (n. 28) makes the same point in his discussion of

- 'abstract metrical territorial definition of social relationships', imposed through maps.
78. In relation to the concept of a 'normal science' *episteme* a weakness of Foucault's formulation is that he insists that 'in any given culture and at any given moment, there is always only one *episteme* that defines the conditions of possibility of all knowledge': Foucault, *The order of things*, 168 (n. 22).
 79. For an understanding of patronage in the history of cartography in early modern Europe there is much to be derived from Baxendall, Michael, *Painting and experience in fifteenth century Italy: A primer in the social history of pictorial style* (Oxford, 1972). He writes (p. 1): 'A fifteenth-century painting is the deposit of a social relationship. On one side there was a painter who made the picture, or at least supervised its making. On the other side there was somebody else who asked him to make it, provided funds for him to make it and, after he had made it, reckoned on using it in some way or other. Both parties worked within institutions and conventions—commercial, religious, perceptual, in the widest sense social—that were different from ours and influenced the forms of what they together made.'
 80. By the nineteenth century the place-names associated with linguistic minorities in many European states were being deliberately suppressed but the origins of such policies as an agent of statecraft still have to be described in the history of cartography: see Ormeling, F. J. *Minority toponyms on maps: The rendering of linguistic minority toponyms on topographic maps of Western Europe* (Utrecht, 1983).
 81. Todorov, Tzvetan, *The conquest of America: The question of the other*, trans. Richard Howard (New York, 1984) is a revisionist essay with important ideological pointers to the way we view the silences of the New World cartography of the 'Discoveries' period.
 82. Four styles of cross are used to identify ecclesiastical rank. The smallest category of civil settlement is identified by a plain dot while other settlements are shown by pictorial signs. These are not clearly distinguished but range from small to large.
 83. For a discussion of the impact of Reformist issues upon the content of maps of the Holy Land, see Delano Smith, Catherine, 'Maps in bibles in the sixteenth century', *The Map Collector* 39 (1987), 2–14: for other examples see Nebenzahl, Kenneth, *Maps of the Holy Land: Images of Terra Sancta through two millennia* (New York, 1986), esp. 70–133.
 84. For an analysis of the religious content in *mappae-mundi* see Woodward, David, 'Medieval *mappae-mundi*,' in Harley, J. B. and Woodward, David (eds.), *The history of cartography*, vol. 1 (Chicago, 1987), 286–370.
 85. For example, N. Claudianus' map of Bohemia (1518) may have been prepared for the purpose of showing the distribution and status of Papal and Hussite adherents, since so little topographical information is included; P. de la Beke's map of Flanders (1538), stronghold of Protestantism, concentrates on categories of religious institutions; C. Radziwill's map of Lithuania (1613) for its part distinguishes Orthodox from Roman bishops.
 86. Suggestive of such a silence of religious conviction is provided by John Norden, the late-sixteenth and early-seventeenth century English map-maker. Norden was anti-Catholic and on only one of his county maps, Middlesex (1593), does he show 'bishop's sees' and then with a curious star-like sign rather than a cross (a papal symbol abhorred by some protestants). On the other hand, his unusual inclusion of chapels of ease on most of his other maps can be attributed to his deep interest in ecclesiastical matters. I owe this example to Catherine Delano Smith.
 87. Again further contextual research is needed to establish whether we can regard these silences as an action prophesying the ultimate triumph of Christendom or merely a failure to update old images and texts. On the persistence of an old topography of the Holy Land and its meaning see: Katzir, Yael, 'The conquests of Jerusalem, 1099 and 1178: historical memory and religious typology,' in *The meeting of two worlds: cultural exchange between East and West during the period of the Crusades*, ed. Vladimir P. Goss and Christine Verzar Bornstein (Kalamazoo, Michigan, 1986), 103–131; for the continuing consequences of the mental set of the crusaders in Holy Land cartography, see Nebenzahl, *op. cit.*, *passim* (note 83).
 88. This may have been an indirect expression of the sumptuary laws which regulated how the members of some European social groups should dress. In the case of England and her colonies it has been suggested that the purpose of these laws was 'that no one would be able to slip over into a status to which he did not belong': see: Kupperman, Karen Ordahl, *Settling with the Indians. The meeting of English and Indian cultures in America, 1580–1640* (Totowa, New Jersey, 1980), 3. For a wider discussion of the social significance of dress codes in early modern Europe see Braudel, Fernand, *Civilization and capitalism 15th–18th century*, vol. 1. *The structures of everyday life: The limits of the possible*, trans. Sian Williams (London, 1981), 311–33.
 89. Kupperman, *op. cit.*, 2 (n. 88).
 90. Key in north-east corner of John Smith's 'Virginia,' 1612. For a detailed description of this influential map and its various printed states see Verner, Coolie, 'The first maps of Virginia, 1590–1673,' *The Virginia Magazine of History and Biography* 58 (1950), 3–15.
 91. For a somewhat later example of the deliberate use of maps in this way see De Vorsey, Louis Jr., 'Maps in colonial promotion: James Edward Oglethorpe's use of maps in "selling" the Georgia Scheme,' *Imago Mundi* 38 (1986), 35–45.
 92. For reproductions see Schwartz, Seymour I., and Ehrenberg, Ralph E., *The mapping of America* (New York, 1980), Chapter 4, 'Permanent colonization reflected on maps: 1600–1650,' 84–109.
 93. Kupperman, *op. cit.*, 33 (n. 88).
 94. *Ibid.*, 1.
 95. This silence, like others, cannot be regarded as an historical constant. By the nineteenth century it

- has been pointed out that even popular maps were showing the location of Indian tribes in the American West and Southwest. This 'probably confirmed in the reader's mind an image of the . . . [region] as a place heavily peopled by hostile Indians': *The mapping of the American Southwest*, ed. Reinhartz, Dennis, and Colley, Charles C., (College Station, Texas, 1987), 67.
96. For a discussion relevant to the depictions of scenes of cannibalism on early manuscript and printed maps of the New World see Kolata, Gina, 'Are the horrors of cannibalism fact—or fiction,' *Smithsonian* 17, no. 12 (1978): 150–170; for wider implications see also Arens, William, *The man-eating myth* (New York, 1979).
 97. Helgerson, *op. cit.*, 81 (note 40).
 98. Monmonier, M. S., 'Cartography, geographic information, and public policy,' *Journal of Geography in Higher Education* 6, no. 2 (1982), 99–107.
 99. The notion of the 'unthought' (*impensé*) is that of Foucault.
 100. In the cartographic literature see, notably, the two recent essays by Wood, *see*: Wood, Denis, and Fels, John, 'Designs on signs: Myth and meaning in maps,' *Cartographica* 23, no. 3 (1986): 54–103; and Wood, Denis, 'Pleasure in the idea: The atlas as narrative form,' in *Atlases for schools: Design principles and curriculum perspectives*, ed. Carswell, R. J. B., de Leeuw A. J. A., and Waters, N. M. *Cartographica* 24, no. 1 (1987, Monograph 36), 24–45.
 101. Helgerson, *op. cit.* n. 40, is an example of how 'The new historicism' in literary studies has brought maps within its purview as an aspect of representation; it is taken for granted that the map would be read as any other text: I owe this point to Dr. Richard Eversole of the University of Kansas at Lawrence.
 102. Muehrcke, Phillip C., *Map use. Reading, analysis, and interpretation* (Madison, 1978); 103. Foucault, *Archaeology*, Chapter 6, 'Science and Knowledge,' 178–195 (note 5), refuses to make a distinction between 'science' and 'ideology.' This places him apart from traditional marxism in which 'science' and 'ideology' have always been regarded as separate categories of knowledge. It is this latter position, derived from positivist science, which has established itself within cartography (and the history of cartography), and is reflected, for example, in the assumed major cleavage between 'propaganda maps' and 'truth maps.' For similar conclusions about the artificiality of this divide, taking examples from present-day maps, see Axelsen, Bjørn, and Jones, Michael, 'Are all maps mental maps?' *GeoJournal* 14, no. 4 (1987): 447–64, and (much earlier) Wood, Denis, *I don't want to, but I will. The genesis of geographic knowledge: A real-time developmental study of adolescent images of novel environments* (Worcester, Mass., 1973), *passim*.
 104. Mann, Michael, *op. cit.*, 524–25 (n. 29). While he does not mention cartography specifically it is clearly part of 'the infrastructure available to power holders' and is among 'the social inventions that have crucially increased power capacities.'
 105. The notion of 'truth effects' is that of Foucault.

American Geographical Society Collection, University of Wisconsin-Milwaukee: Fellowships in the History of Cartography

Beginning in 1988 a limited number of short-term fellowships are available for research in the American Geographical Society Collection of rare atlases, maps, books, pamphlets and periodicals.

Fellowships in the History of Cartography and related subjects will be granted by competitive application from non-resident scholars, with awards based upon the research merits of the proposal and its relevance to the Collection.

Fellowships carry a maximum stipend of \$800 per month. It is anticipated that most Fellowships will be of one month's duration but longer research projects will be considered. They can be taken at any time

throughout the year. Fellowships are open equally to independent scholars and to researchers associated with colleges and universities. Doctoral candidates who have completed all the requirements for the degree are eligible to apply.

Application for 1989 and beyond are due on March 1 and October 15 each year. Awards will be announced within 60 days of the application deadlines. An application form should be requested from Dr J. B. Harley, Office for Map History, Golda Meir Library, University of Wisconsin-Milwaukee, PO Box 399, Milwaukee, Wisconsin 53201, U.S.A.