Ekkehard Schönherr[*]

The expansion of Barcelona in the early modern age.
Aspects of a historian's access to historical maps
and the search for new representations of historical spatial information.

Summary: The paper aims to present the investigations of the project "History and Cultures of Spaces in the Early Modern Age" (*Geschichte and Kulturen der Räume in der Neuzeit*) based at Erfurt University, Germany. The urban development of Barcelona from the 17th to mid-19th centuries will be portrayed by analysing historical maps. This specific example will lead to a wider debate concerning the problems of the history of urban space in general.

Urban development and its perception are not congruent. Different sources lead to diverging pictures of urban space. For this reason, we have based our research on a large variety of documents such as historical maps, administrative documents, diaries and travelogues.

New forms of representation of historical research on space are now needed in order to present the results of our project in a visual form. This could be for instance a dynamic map which not only allows for the embedding of historical maps but which also can convey spatial perceptions together with an element of historical uncertainty.

Introduction

"Space" can be seen as a social construct created by diverse active participants who are interconnected in a variety of ways. In this context, space is by no means a clearly defined, absolute container, in which something takes place. Instead, we only encounter space as an area of spatial relations comprising various objects, participants and perspectives.

Urban space is not only defined by its network of streets or by the location of noteworthy buildings but also by the daily movements and toing and froing of both its inhabitants and visitors. This includes the places they visit or avoid, depending on their interests or social groupings such as gender, religion, profession or age. In addition, even the reaction of the senses plays a role in what constitutes space, whether it be a matter of the scents and smells of the city or the quiet places and noisy areas. Finally, we can include the places which inspire either enthusiasm or horror and the places where we feel safe or where we feel afraid.

In our research project carried out by the University of Erfurt entitled "History and Cultures of Spaces in the Early Modern Age", we are mainly concerned with those spaces which are made up of social factors. In my sub-section of this project, we are now dealing with the processes involved in urban development that took place before the huge urban expansions of the 19th century. In conjunction with this aspect, we are also endeavoring to find an adequate representation to reflect the flexible nature of the cityscape and to take into consideration factors such as how the city is used and people's general perceptions of the city. In short, we want to breathe life into maps. If mapmaking often entails the attempt to objectify space, we are more interested in "subjectifying" this apparently objective, static dimension. To express this a little less controversially, we intend

[*] M.A., University of Erfurt/Germany, Philosophische Fakultät, Lehr- und Forschungsbereich „Geschichte und Kulturen der Räume in der Neuzeit", Postfach 900 221, 99105 Erfurt [ekkehard.schoenherr@uni-erfurt.de]

to re-capture the spatial activities and perceptions of both individuals and groups from the "objec-tivified" framework as normally provided by cartography. Even though we use historical city maps for our source material, we also refer to documents pertaining to the administration of the city including planning permission documents and urban bylaws. When extant, we make use of private sources such as diaries or reports on particular events. In addition, travelogues written by visitors to the city are also an important resource.

By way of illustration of the points I have just made, I now intend in this paper to provide a broad outline of the history of Barcelona's urban structure. Here, I am mainly concerned with the exter-nal form of the city, as presented in the historical maps. In addition, I shall touch upon alternative perceptions of the city to be found in other types of source material. Finally, I shall discuss briefly a few potential challenges to the science of cartography which have resulted from our general approach.

General Outline of the History of Barcelona in the Early Modern Age

From the Middle Ages and up to the beginning of the 18th century, Barcelona's basic urban struc-ture remained more or less constant. The city's main features comprised the outer city wall (which surrounded the whole city and was completed in the 15th century) and the inner city wall, which separated the densely populated real city centre from an area called the Raval, used mainly for agricultural purposes. The "Count's Canal" (acequía condal), which provided Barcelona with ser-vice water, was an essential element in the economic development of the city. The canal was the main reason for locating the commercial centre in the northern part of the city in the quarters known as La Ribera and San Pedro. The construction of a jetty, flanked by a large sandbank, pro-vided the city's most striking visible alteration of the 16th century.

This constancy of the cityscape with regard to any urban development throughout the 16th and 17th centuries has been interpreted for a long time as a sign of Barcelona's stagnation or, even of its decadence. Today we are now aware that up to 1640 there had been a radical shift in the Cata-lonian urban system. In the course of its change of status, Barcelona, the political centre of Cata-lonia, became its leading city of commerce. It changed from being a city which produced and sold its own goods to a city, which handled products manufactured in the neighbouring villages. (Gar-cía Espuche 1998).

Figure 1: I. Basire, Plan of the City of Barcelona, 1706 (Institut Cartogràfic de Catalunya, RM.275743).

The city parliament was mainly concerned with both the preservation and expansion of its essential functions and combined this task with a policy of embellishment. Communal buildings and the waste water system were extended, new monuments were erected and public fountains were built. In the Raval a few new religious houses and hospitals were founded and in the busy city centre numerous licenses were granted for mills and slaughterhouses. Even the private houses underwent alterations such as adding balconies or providing windows with lattice work or shutters.

Already in the 17th century, Barcelona's increasing commercial importance led to a growth in population, which could not be sufficiently provided for simply by building new houses, but, instead, the existing buildings were adapted for this purpose. Increasingly, several families had to share the same house. In the less commercially oriented areas, the ground floor shops were converted into living quarters. In the upper floors, living spaces were extended by roof projections beyond the house and into the street area. (Perelló Ferrer 1996).

However, these internal developments hardly appear at all in the maps and city plans. For historians, access to these alterations is to be found mainly in the non-cartographical public records.

From 1640 Barcelona was constantly at war and up to 1714, the city had been besieged many times by Castilian, French or English troops. In the context of these sieges, a large number of maps were made of Barcelona in the decades around 1700.

Figure 2: A. Mortier, True and Exact Plan of all the Old & New Fortifications of Barcelona, 1708 (Institut Cartogràfic de Catalunya, RM.221454).

At the end of the Spanish War of Succession, the city suffered its most drastic defeat ever. In September 1714, the city was captured by Castilian and French troops after a 14-month blockade and siege. This was a disaster both for the Catalans and their capital city. The city government was abolished and Catalonia was subjected to the central authority based in Madrid.

In Barcelona, the Spanish Army was the dominant power throughout the whole of the 18th century and was responsible also for the radical changes in the city structure, which Barcelona experienced during this century. It was not until about the end of the century that Barcelona's citizens could once again assume an active role in re-shaping their city.

The cadastre of 1716 was the first administrative instrument for governing the city. This cadastre is now the most comprehensive and at the same time most detailed source of information concerning the spatial aspects of population distribution and ownership in Barcelona before the Spanish War of Succession. (García i Espuche and Guàrdia i Bassols 1986: 47f)
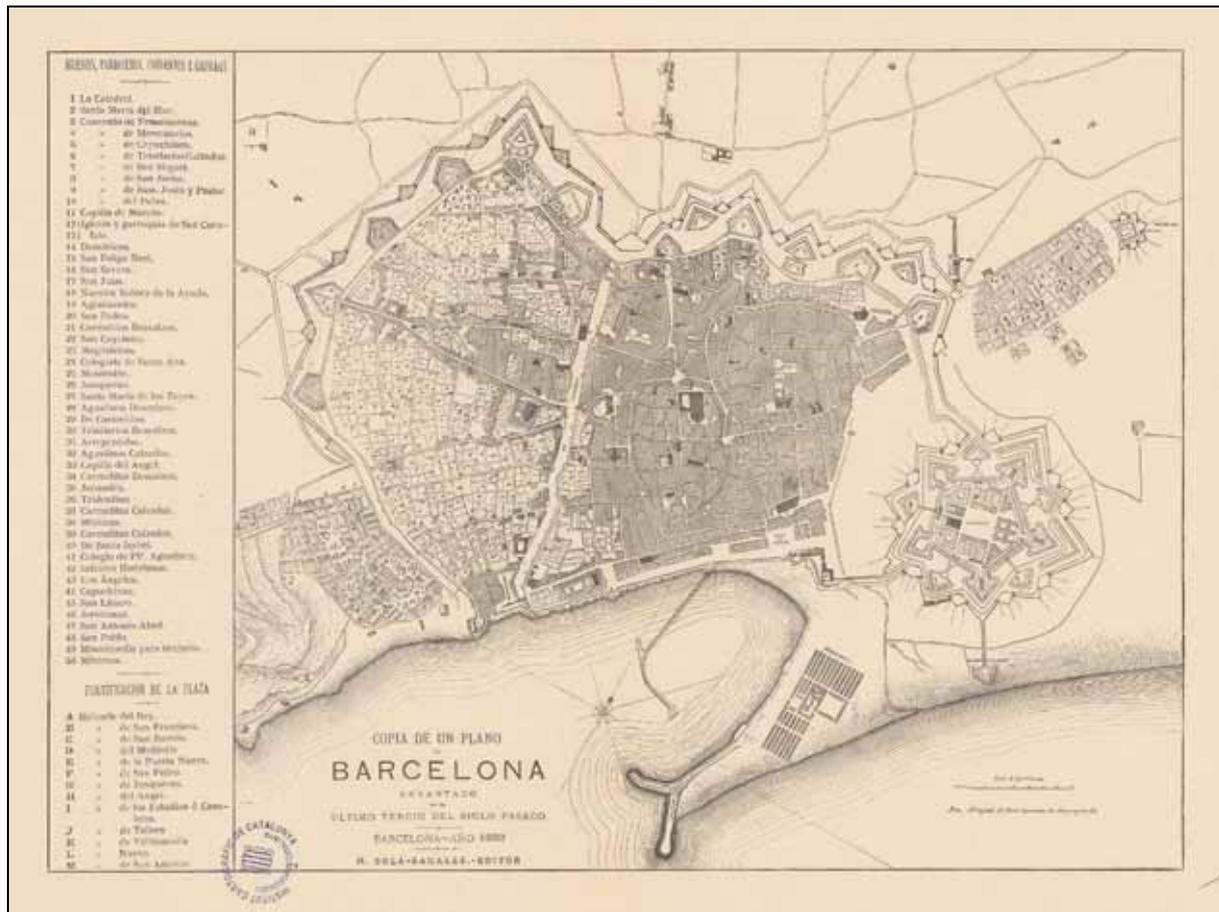
Figure 3: Solá-Sagalés, Copia de un plano de Barcelona levantado en el último tercio del siglo pasado, 1889, (State approx. 1775) (Institut Cartogràfic de Catalunya, RM.42027).

In 1715 construction work began on a citadel on the north eastern edge of Barcelona in order to gain military control over the city. La Ribera, the most commercially active quarter of Barcelona was torn down to make way for this fortress together with its esplanade.

The fortifications were extended to defend the city from outside attack. However, securing the city's circumference proved to be a considerable problem at a time when the population was increasing in the 18th century. The city could not expand outwards and so the population density continued to increase within the city walls. In 1753 the army set up a new quarter called La Barceloneta in order to cope with this increase in population. The Barceloneta was bounded by the city wall and the sea on the area which was formed alongside the jetty.

Figure 4: Moulinier, Plano de la ciudad y del puerto de Barcelona, 1807 (Institut Cartogràfic de Catalunya, RM.19425).

Even the Barceloneta could not provide a long term solution to the growing population. In just less than thirty years, between 1759 and 1787, Barcelona's population increased from 53 to 95,000 inhabitants. As the city could not expand outwards, solutions to find more space began to take place within. The Raval district in the south western part of the city became the first priority for clearing new ground. Although there were a few religious houses and hospitals in this area, its main function was agricultural. Private citizens bore the brunt of this expansion inside the city. In 1775 the inner city wall was demolished. After this time, the Ramblas, previously situated on the outside of this wall, was transformed into an avenue. From 1785, initiatives led by land owners opened up numerous new streets which considerably altered the character of the Ramblas. From 1830, Barcelona's industrial economic boom together with the introduction of the steam engine enabled this quarter to become the most important industrial and workers' district.

Finally in the middle of the 19th century some reconstruction and renovations took place in the heart of the historical part of the city. This resulted in the Ramblas district's increasing importance as the new social centre in Barcelona. New town squares were constructed over the ground of former monasteries, which had been made possible by the dispossession of church property. In addition, a new municipal crossroads was being constructed step by step with axes to join the citadel's Esplanade with the Ramblas quarter.
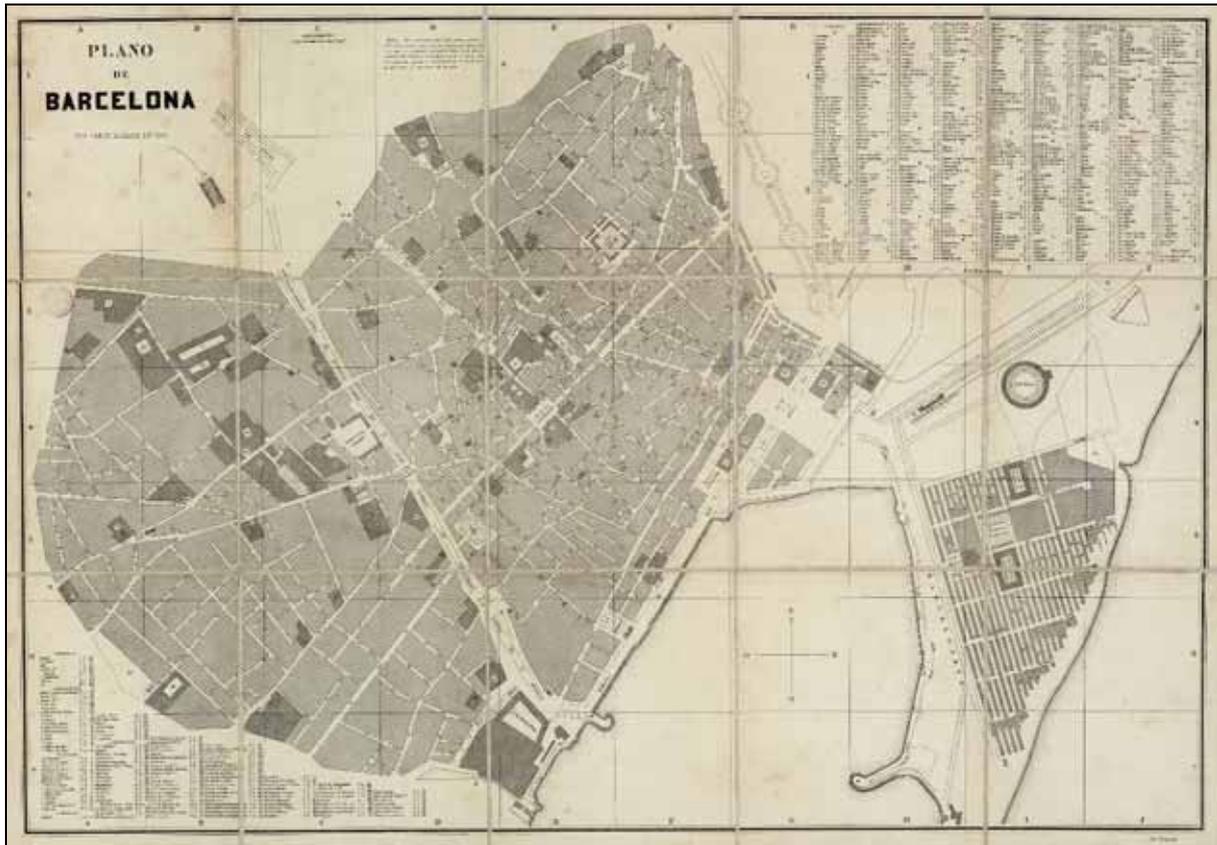
Figure 5: Alabern, Plano de Barcelona, 1857 (Institut Cartogràfic de Catalunya, RM.49231).

In 1854, the city walls were pulled down and can no longer be seen on the above map. In this context, the placing of the map index just above the citadel is highly significant and can only be understood as political statement. This symbolic extinction of the fortress on this map anticipates its actual demolition by 15 years.

The City Structure as Seen by the City's Government and in Foreign Travelogues

It can be seen from the maps that Barcelona is clearly divided into two sections. This division is defined by the outer and by the inner medieval city walls. The fact that these maps were used for military purposes is the main reason for the prevalence of this bi-partite view of the city because it is by no means the obvious division. Similarly, other functional requirements led to alternative interpretations of the cityscape.

Since the Middle Ages, Barcelona had been divided into four sections for administrative purposes on account of the two axial streets which form a crossroads at the Plaza Sant Jaume. The inner city wall is irrelevant to this division as it simply ignores the boundaries of the del Pi and Framenors quarters. It was not until 1770 that the Raval was defined as independent quarter of the city, thus at the very moment just before the city wall was due to be demolished. In the context of Barcelona's division into four city quarters, even the city walls proved to be more "porous" than the main avenue. The construction work for this avenue on the Ramblas began in1775. (Brotons i Segarra 2008)

Figure 6: Daumont, Barcelone, Ville capitale de la Principaute de Catalogne située sur la mer mediterranée, 1739-1748 (Institut Cartogràfic de Catalunya, RM.215203).

Again, different interpretations of the city's structure can be found in the travelogues of visitors to the city.

In these reports there are frequent references to the harbour and to the most prominent view of city on the side looking out to the sea. The public face of the city could be seen on the Muralla del Mar, the side of the city wall facing the sea, where the main occupation was strolling and promenading. In some of the travelogues we come across descriptions of the whole cityscape as in the report of the anonymous traveler known only as J.M., writing in 1704:

> "It is situated by the Mediterranean Sea and seems to be divided into two cities, one of which forms the inner city, which has high walls and four gates lead through these four walls corresponding to the four areas of the heavens and this part is called the Old Town. The other city is built around the Old Town and, likewise, has strong walls and solid towers and can be called the New Town."(J.M. 1704: 461)

Even if this description once again refers to a bi-partite division, it obviously does not correspond to the division in the historical maps. The author did not refer to the division based on the medieval inner city wall, but to the walls at the time of the city's Roman foundations, around which the medieval town was built.

We encounter this view of the city once again in a 19th century travelogue written by a German visitor called Adolf Loning, but this description also includes the Barceloneta:

> "Actually, it consists of three cities: the Old Town and the New Town, and the Barceloneta with its harbour. The New Town almost comprises the whole city as it encompasses the Old Town, whose walls are still completely intact in many places. The building of

these walls is often attributed to the Romans because the Spaniards, who know very little about architecture and the Ancient World, ascribe everything to the Romans." (Loning 1844: 21)

Figure 7: D.J. Serra, Plano de Barcelona y de sus alrededores en 1890, 1891 (Institut Cartogràfic de Catalunya, RM. 41381).

The perception of Barcelona as a bi- or tri-partite historical city disappeared as a result of the adoption of Ildefonso Cerdà's plan for the city's expansion and, also as a result of the increasing number of buildings being built in this constantly expanding city. A new dichotomy became dominant with regard to the expanding city. In the late 19th century, Barcelona still appeared to be divided into two parts, but this time the reference points had changed.The city, which has been the main focus of our attention, was perceived as a unit, with its centre defined by the Ramblas as the main avenue. This was seen in contrast with what was perceived as modern Barcelona, which reached far beyond the historical city boundaries:

"Most of the city is very old and in the style of an historical town, it has narrow, winding alleys and tall houses. A modern town, criss-crossed by wide avenues, is in the process of being formed around the old part of the city. The new part has splendid palaces in front of which small gardens are spread out, much in the fashion of the modern districts in Paris. […] Everything is incomplete and unfinished, but after about 5-10 years this part of Barcelona will blossom in a most impressive fashion." (Bark 1883: 336).

Concluding Remarks on the Representation of Evidence in the Context of Historical Spaces

It has been shown that perceptions of space have emerged from the various non-cartographical historical sources which diverge widely from those to be found in maps. For this, only two kinds of very clear examples have been given concerning the structuring of urban space into districts and the perception of these structures by foreign visitors.

In addition, the historian is confronted with completely different sources, which allow for varied opinions concerning the spatial organization of cities in the past and concerning other people's perception of these spaces. The main problem, however, is how to represent this knowledge in a cartographical form. Only exceptionally does one come across unambiguous information even for the physical development of a city as a whole. It is more frequently the case that one finds sporadic utterances, which can also appear en masse, describing a particular place at a specific time. This particularly applies to applications for alterations in private houses. City-bylaws, in contrast, reveal information concerning the wider spaces such as those which regulate access via various gates intended for animals for slaughter and for the transport of coal, those which allow illuminations to take place on particular streets for festival days or those that determine the routes for processions such as on carnival days.

One aim of our project is to find adequate ways of representing this interplay factors taken from urban development, use of communal space and people's perceptions. The main challenge, seems to me is how to present a variety of approaches reflecting change which refers to space, which is also itself undergoing change. Dynamic maps would seem to provide the most suitable means to correspond to the spatial dynamics. From the point of view of a historian, several principles arise which need to be taken into consideration when using these kinds of dynamic maps:

1. Geo-referencing is an important auxiliary tool for a general representation of diverse items of evidence referring to space and for the comparisons of these items with each other. In addition, it is an essential criterion for assessing historical maps. However, in certain circumstances, it can become too tight a straightjacket when creating new representations with the result that important historical information can end up side-lined. When inappropriate, it is better to forgo geo-referencing.

2. Historical maps tend to allow for no ambiguities and thus often make urban data seem to be clearer than actually is the case. This applies to the shape of buildings and thus to the whole aspect and individual features of any particular street. Reconstructions should be recognised for what they are.

3. "Blank areas" for unknown items also need to be representable. In other words, strategies need to be developed to avoid clarity for those situations which are not clearly unambiguous. Alongside the blank areas, there is the phenomenon of "dying data" i.e. data due to become extinct and thus, for which there is only a limited duration of validity: if there is no place to document new evidence, which either guarantees continuity or change, then this data will fade away with time before disappearing entirely.

4. A comprehensive coverage of heterogeneous items of information referring to space is a project, which cannot be envisaged without teamwork consisting of a variety of persons working together over a considerable period of time. In addition, there is the need for a constant adaptation to cope with new historical information. In order to be able to attain permanent validity in this field, the map should be sufficiently flexible to be open to a continuous supply of additions and amendments.

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All maps by The Cartographic Institute of Catalonia (Institut Cartogràfic de Catalunya).

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