Mapping Society

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Conclusions

The truth is that the dynamic of urbanism as we know it makes inevitable the syndrome of violence, alienation, high crime rates and delinquency that we associate with our cities. Once they have grown too big, these problems are unavoidable. ¹

The essential spatiality of urban social phenomena

Many of the maps shown in this book have valency in communicating statistics about society. They have used maps as means of capturing data gathered from direct observation – and latterly, surveys – in their spatial setting: using the mapped structure of urban form to classify the data spatially. In some cases, they have changed thinking about poverty, disease, segregation and crime, by highlighting the problems associated with these phenomena, and by locating their causes. We have also observed how space syntax can deepen the understanding of the relationship between spatial layout and social problems, by providing the tools to describe and analyse street networks empirically.

We have seen for example evidence to support Charles Booth’s observations regarding the impact of the city on the long-term impoverishment of its inhabitants. While there is clearly not a one-to-one relationship between society and space, poverty is manifestly bound up with spatial isolation. More subtle socio-spatial findings, such as the role of urban streets in creating opportunities for encounters between people from different backgrounds, have also been shown to be fundamental to explaining how some groups have managed to overcome their apparent social segregation: just as deprivation is a multi-dimensional phenomenon that can worsen if it continues over time, so
are other social conditions: one’s membership of a minority religion need not preclude social integration in other settings, so long as the environment allows for different degrees of spatial integration to be maintained. Similarly, sub-cultures of fashion, politics or economic activity will exploit the urban setting, so long as it is not too sharply divided. Disease and crime are also frequently associated with spatial effects.

We need to keep Booth’s example in mind when developing more informative definitions of deprivation for tackling urban problems comprehensively. To a certain extent this is understood. Internationally, the Millennium Development Goals propounded to ‘make poverty history’ initially comprised 8 goals and 21 targets with indicators, in a recognition that poverty is multi-dimensional. In the United Kingdom the Index of Multiple Deprivation has a similar conception, defining deprivation as comprising many interconnected factors additional to income, such as health deprivation, environmental conditions and barriers to housing.

Cities sort people through property and labour markets, through social organisations, but also through their patterns of spatial organisation. The results of these dynamics of mixing are the spatial patterns of micro-segregation of people, land uses and activities. Cities are shaped simultaneously by built form, namely the sum total of buildings linked together by public space, as well as the complex system of human activity linked together by social interaction:

The social city is either side of the physical city: it brings it into existence, and then acts within the constraints it imposes. It seems unlikely that either is a wholly contingent process. But both relations raise uncomfortable issues of determinism: how can a physical process in the material world relate to a social process in a non-trivial yet systematic way. This places philosophical as well as methodological obstacles in the path of reflection and research.

In effect, the myriad maps presented in the preceding chapters are transcriptions of different geographies of inequality, made distinctive by the specific socio-spatial dynamics at play in their localities. By viewing the maps as historical records of these geographies, it has been possible to start to arrive at a clearer understanding of both the social and the political context in which they were created, but also at a more general understanding of how cities work as social systems.
In the case of disease, for example, it has been clear how a combination of poor housing, overcrowding, a lack of sanitation and general social neglect can, along with natural features of the area, exacerbate the numbers of people falling ill from certain diseases. The striation of cities by railway or highway infrastructures can compound social problems on the ground, making it more difficult to obtain work, to gain access to healthy food or more generally to integrate poor and rich in the same location. As mentioned already, disease mapping remains a vital tool in pinpointing loci of disease, but also in investigating underlying spatial or environmental causes of disease. Research might enquire as to whether the terrain, accessibility and access to healthy food collectively influence patterns of obesity and diseases related to this. The fact that poor health and poverty are still inexorably intertwined is evidently partly to do with poor housing, but there are many more factors that require investigation. In some cities diet-related diseases are increasingly being associated with access to fast food that is cheap but lacking in nutrition.

The chapters on poverty maps showed that deprivation is the outcome of myriad contributory factors, including social conditions, regularity of income and wider spatial accessibility, which are collectively brought to bear on long-term social outcomes. In addition, the way in which street networks are organised both locally and city-wide can bring about greater or lesser opportunities for wealth and poverty to be close to each other. What is clear is that interventions need to be made in the social causes as well as the spatial effects of poverty.

The historical maps of race and ethnicity have highlighted a different aspect of urban society. They have shown how frequently the spatial clustering of minority groups can be perceived as problematic because of the size of the settlement, or because of underlying issues of racism or at least ethnic marginalisation via the attitudes of the majority. Poverty coupled to ethnic clustering is frequently a contributory factor in the long-term stagnation of a group in an area, especially when the underlying cause is in fact spatial segregation – though equally a group may stay in an area due to benign factors, such as the presence of religious or cultural institutions, or commercial premises. The reality is that there are almost as many factors involved in minority ethnic clustering as there are maps recording it; so, the map of black settlement in Philadelphia would need to consider the group’s political history as well as its poverty situation and state of origin, while the map of Jewish settlement in London shows the importance of accounting for how long a group has been in the country and for patterns of work as well as country of origin.
Once spatial isolation is involved, it is likely to be a contributory factor in whether the cluster is a ghetto or an ethnic enclave, whether it persists or is just a station-point on the way to acculturation or integration. Taking these considerations together, we can see that simply labelling a group as segregated disregards a highly complex socio-spatial constellation.

From the point of view of crime, the review in Chapter 6 found that while it is viewed as being disproportionately tied up with poverty many crimes in fact have fundamental environmental conditions, with certain anti-social behaviours or crimes gravitating to the more isolated areas of the city, while crimes that involve preying upon people (such as robbery or pickpocketing) have their own spatial demands. Nowadays there is much greater understanding about the socio-spatial mechanisms involved in where crime occurs, but there is plenty more to investigate in the burgeoning field of environmental criminology.

What is evident is that maps of crime, poverty or disease can reveal spatial regularities that underpin many of the most urgent social problems present in cities today. Cities continue to be characterised by segregation of different forms: enclosure and exclusion, and increasingly, social, economic, and political fragmentation. The massive growth of the urban population across the globe is creating new forms of urban inequality on a sharper and larger scale than ever before. It is also evident how cleavages in terms of socioeconomic status, lifestyles and cultural and ethnic identities correspond to phenomena of residential segregation, so that in their more extreme manifestations the result is a form of hyper-segregation that combines both poverty and race. This trend toward new forms of spatial segregation has meant that some authors have forecasted that in the future cities will evolve into fragmented patchworks of impoverished ghettos and affluent enclaves.

Social mapping has different challenges nowadays than in the past. We could not draw up a Booth map today as we do not have access to the level of detail on the population, although we can get close to it. However, issues with the quality of data continue. These are due now not so much to an absence of data as to an abundance of it, giving the impression that we can be all-seeing and all-knowing about society today. Yet this is patently untrue. If we take patterns of employment, for example, it is almost impossible to grasp the full extent of a labour market, given that statistics rarely include self-employed and casually employed people, whose earnings change daily, let alone people working illegally. Similarly, it is very difficult to capture data on where work is being carried
out, especially if it is in informal locations, such as people’s front rooms, or above or behind high-street shops. National statistics rarely record this sort of information effectively, which means that it is overlooked in drawing up policy and then also undervalued when drawing up plans for urban areas.

Bearing this in mind, it is important to note those urban theorists who have asserted the essential spatiality of urban social phenomena. For example, when Ed Soja claimed in *Seeking Spatial Justice* that the social problems common to the Parisian *banlieues* were the result of situating new immigrants at the city’s edge, he was highlighting the vital role urban space can play in shaping social patterns. Others have noted that social phenomena need to be read as inherently spatial phenomena to be fully understood; the “‘ghetto’ is . . . [after all] an empirically determined, physical, quantifiable, experiential object”.

### Rethinking urban social problems spatially

Given the complex interrelationships between the configuration of local streets and wider cross-city (as well as global) trajectories it is no surprise to find that urban society evolves in a complex fashion. Yet this complexity realises itself in measurable spatial patterns, which differ due to local circumstances.

This book’s opening chapter highlighted the historical importance of the Venice ghetto, not only because of its being the prime example of enforced isolation, but also because a close reading of its spatial nature reveals so much of the complexity of urban social problems. History shows that the position of the Venice Ghetto, a peripheral island that was nevertheless situated within a few turnings from the main thoroughfare, meant that it was possible for its inhabitants to have high rates of commercial and cultural interchange with Venetian society, despite their spatial confinement. Ironically, as Richard Sennett has noted, spatial isolation led to a flowering of a ‘common culture’ between the wide variety of Jewish sects and nationalities who, having arrived from elsewhere in the world, found themselves together for the first time in a single place.

Physical and social dynamics of public space play a central role in the formation of publics and in the public culture, and although the Jewish inhabitants of Venice (and subsequently of Rome) trod a hazardous
pathway through the city as they carried out their daily lives, especially when demands of religion required them to move in groups (such as for funerals), they were able to shape their opportunities for interaction with the world at large while traversing the city’s streets and canals. In addition, notwithstanding the constraints on their movement at night, the ghetto also provided an opportunity to create a state of mutual solidarity, as well as a place of refuge for Jewish inhabitants at times of insecurity, such as at Easter 1766 in Rome:

The Jews in this city are indulged in the use of synagogues; but are obliged to live all together in the Ghetto, as they call such places in the cities of Italy. At nine o’clock every evening the gates of the place where they live are shut up, and opened again in the morning; but at Easter they are locked up from Thursday in passion-week ‘till the Monday following, during which time no Jew dares to be seen abroad. When they appear in the streets they are distinguished by a piece of yellow silk, or crepe, on the crown of their hats and are subject to a great penalty if seen without it. They are most of them very poor, and little respect is paid to the riches of them. Their synagogue has a mean appearance; yet it has some fine apartments, adorned with a great number of silver lamps.9

It is difficult of course to know for sure if the opportunities for encounter that arise from the historical arrangement of streets were always realised. The literature on daily encounters in the public realm tends to be divided on whether physical co-presence in the public realm necessarily translates into meaningful face-to-face interaction or if it remains superficial and at the level of familiarity. The serendipity of casual encounter that arises from the density of people present in cities can be linked to the historical development of an urban civic culture, yet in the early days of the modern city, theorists such as Simmel were concerned that the move to the city made relationships remote and encounters anonymous.10 Possibly a more useful approach is to see these matters as being on a continuum, from casual familiarity due to physical co-presence, to encounter, to interaction and – occasionally – to actual social engagement. As such, public space without public presence is unarguably dysfunctional and, in contrast, public space becomes most meaningful when it encourages an encounter between people from different backgrounds. Objectively speaking, situations where people were physically isolated in cities was (and is) likely to have created the conditions for their social isolation.
What is evident from many of the historical cases that we have seen is how a normative mixing of people from different backgrounds within the public realm was not necessarily seen as problematic, but higher concentrations of visibly distinctive people from a different cultural or religious background were much more likely to bring about a degree of fear or hostility. Although many of the disease maps we saw in Chapter 2 would effectively mirror maps of poverty, it has been clear how the juxtaposition of racial segregation, poverty and disease (or at least fear of disease) led to the physical isolation of the Chinese inhabitants of San Francisco and its many sister settlements. Physical isolation helped intensify racialised stereotyping, such that Farwell’s text that accompanied the 1885 maps had sentences that would not bear repeating nowadays. In other words, when physical isolation is combined with a lack of intergroup contact, divisions between hostile communities can only intensify. Even nowadays, cities such as Belfast, where the divisions along ‘peace lines’ have created sharp boundaries between national-religious groupings, feature places that become perceived as ‘out of bounds’ because they are situated in contested territory.¹¹

On the other hand, there is growing evidence from studies in locations as varied as Jerusalem and Rio that improvements in public transportation can help bring about the sort of everyday casual encounters that help break down barriers between communities. In the case of Jerusalem, research has found that its light railway has made connections between parts of the city that until recent times had little public transport connectivity. This connectivity is enhanced by the railway’s ability to link central commercial and transport hubs with peripheral neighbourhoods, helping to smooth out sharp economic divisions within the city (although, at times of tension, the increased connectivity can of course be problematic).¹² Mobility is equally important in integrating isolated communities in Latin American cities, where lower mobility affects patterns of encounter outside of an individual’s social network. Differences in the ability to gain access to work and leisure and a lack of shared activity places seem to be the raw material conditions for social distancing and the installation of segregation in everyday life.¹³

A counter-example to the growing connectivity experienced in some cities lies in the lack of transport mobility that can be found in certain districts of Paris. The architect Léopold Lambert has demonstrated this phenomenon in his analysis of the peripheral neighbourhoods of Paris, the banlieues. In Figure 7.1 we can see one of his maps, coloured in shades from dark to light grey to represent a scale of low to high average
income. It is overlaid with the location of cités, the post-war housing projects (marked as white outlines on the map).

The map shows how the spatial distribution of cités is very uneven across the city, with many located in areas of poverty in the remotest northeastern parts of the city. Constructed in concrete in a Brutalist style, the colossal, monolithic structures of the cités have become synonymous with crime, poverty, social isolation and high concentrations of the city’s first- and second-generation citizens of North and West African origin.

A further refinement to this analysis can be found in another map produced by Lambert (Figure 7.2), which juxtaposes the location of the cités (coloured in red in this instance) with circles marking a 15-minute walking radius around each station within the banlieues. The pale grey
circles on the map indicate the maximum walking distance around each of the metro stations that can be covered in 15 minutes (the stations are marked by coloured dots, linked by coloured lines, which indicate the metro routes). It shows that half the cités in the poverty districts are situated beyond the reach of the train stations. This means that if their inhabitants wish to get to work in central Paris, they are subject to lengthy, complicated journeys that will make it difficult for them to hold down a job. In fact, an average of 24 per cent of the population in the north and eastern districts of the periphery is unemployed.

This mapping of a combination of social and transportation indicators highlights how the economic deprivation of a minority population can be exacerbated by a lack of access to a city’s economic heartland.

Figure 7.2  15-minute walking distance from a train station: spatial inequality in Paris banlieues.
Created by Léopold Lambert for The Funambulist (2015). Copyright (CC BY-NC-SA 4.0).
Lambert writes elsewhere about the effect of the city’s peripheral road on perceptions of the inhabitants of the Banlieue as being alienated from mainstream life:

I have been repeatedly writing that the “boulevard périphérique” (highway ring) that surrounds Paris constitutes the contemporary equivalent of the city’s fortress walls that used to be situated at the same place. The particularity of Paris is that the Parisian municipality only exists within these walls . . ., which has for consequence to substantially increase the centralised characteristics of the city in a country already far too centralized.16

While this centralisation of the city is of lesser importance to the wealthy districts to the west of the city, the inhabitants of the poorest districts of the city do not have the economic wherewithal to overcome their physical marginalisation from the city. Thus, while this is not a case of ghettoisation in the sense of the concentration of the bulk of a minority population in one location – the population of the banlieues is diverse ethnically, although marked by many more ethnic minority people than average – Paris’s banlieues are an example of a problematic confluence of economic, ethnic and spatial segregation. Their predicament is worsened still by the specific history of France’s minority Muslim population, who suffer from a legacy of discrimination that can make it harder for them to gain access to higher education and political power – though the tide is now turning on the latter to a certain extent.

In the case of the United States, the complexity of social geography is exemplified by many cities across the country, but the city of Chicago has taken centre stage in the past century and a half. This is due in no small part to the influential work of the Chicago School (though one might argue that the Chicago School’s success came from its location within a definitive locus of urban problems). As we saw in Chapter 6, one of the School’s most influential ideas emerged in its members’ writings on the idea of the ‘ghetto’ in the 1920s and 1930s, when a model of immigrant integration was formulated as a three-stage progression from concentration to dispersal. Urbanism itself was being conceived as a temporal process driven by social heterogeneity. Yet Chicago was experiencing at that time some of the highest rates of black segregation in the country, with 83 per cent of the city’s black population living in neighbourhoods that were themselves black-majority areas: at the extremely high rate of 93 per cent, the concentration of black residents in these areas was much
higher than comparable clusters of other groups in their own respective areas, such as the Irish and Polish populations. As Ceri Peach has pointed out, both historically and today, Chicago’s black population in no way fits the Chicago School’s tripartite model. This is true first for its scale, second in its extreme concentration as a single racial group and third in its lack of mobility over time: ‘in the case of African Americans, outward movement did not always equate to dispersal. The ghetto moved out with them like the tongue of a glacier.’ Peach’s analysis shows how the temporal continuity of racial division is at the heart of the problem of segregation. Not only this, when long-term racial division features alongside reduced access to the job market, socialisation, stigmatisation and limited access to social rights, the confluence of urban problems can be truly labelled as a ghetto. Indeed, features of this confluence were evident even earlier in the analysis of Philadelphia’s black population by Du Bois.

We have also seen how the temporal longevity of urban segregation can be seen across the USA, where the past redlining of districts has led to dramatically different trajectories of wealth and deprivation within quite circumscribed areas, resulting in patterns of racial division on the ground that are not dissimilar to the situation in cities across South Africa, Latin America and the Middle East. The result is a drastic reduction in opportunities for everyday contact between people from different backgrounds.

The role of life on the street in shaping opportunities for social encounter has undoubtedly been a feature of many of the social maps considered in this volume, which have shown how the public houses of impoverished York or London provided a refuge from the degradations of life at home. They were also a place for local communities to cohere, for social life to be constituted and for economic activity to be formulated (whether legal or illegal). The street itself was a place for community interaction, with varying degrees of mixing across social groupings, though in the early years of this book’s historical period this was more likely to be a working-class activity than one for the emerging middle classes, who could afford to remove themselves to the more refined arenas of the salon or (latterly) the department store. We should not though forget that use of the nineteenth-century city’s streets was demarcated by sex as well as by class. Felicity Edholm has described how in late nineteenth-century Paris, ‘working-class women spent most of their time within a quite tightly defined local area and would, within this area, be part of a community of women.’ She also describes how the working-class Parisienne had more freedom to explore her local streets than her bourgeoise
counterpart, who could only venture out of the private sphere alone if it was to visit department stores; otherwise wealthier women experienced life on the street only if they were en route to cafés and restaurants with their husbands.

It is not a coincidence to find the café as central to social life throughout the nineteenth century. Scott Haine has highlighted the greater importance of the café in Paris than in most comparable cities in Europe or the United States. The working-class café provided a ‘distinctive subculture’ with its own rituals of behaviour and an ideal setting for creating ‘an accessible, public, and open forum for social life’. In other European cities such as Vienna and Warsaw, the café was central to the emergence of a political class, who used this quasi-public setting to formulate new ideas and in some cases as centres for assembly, organisation and political action. Into the twentieth century, Michael Banton’s study of black immigrants in London’s East End found the café to be an important touchstone for people who had moved out of the area, to return on the weekend to meet their friends and to consume familiar food. In fact, his book included a map which recorded the location of a variety of cafés, distinguished by cultural background (African, Pakistani, Sikh or Mediterranean) and whether they served a predominantly immigrant clientele or catered primarily for local workmen. As such, the role of the pub or the café (just as much as the role of the market, suq or bazaar) in public life is an often forgotten feature of the way in which marginalised people find a way on the one hand to negotiate a home away from home in the hostile city, and on the other to start to negotiate a position within society at large.

An interesting development of the latter has featured in recent work in South Africa, where Mpho Matsipa has found that a thoroughfare in Johannesburg, Bree Street, has become transformed by the arrival of new migrants with new modes of urban dwelling. She finds that the many different economic activities that are present on the street are transforming the way in which the area is being used. The importance of minority ethnic businesses on prosaic streets for sustaining urban spatial justice is becoming apparent elsewhere in the world, from New York to Montreal, Amsterdam and London, where changes in cultural visibility can assist minority groups to assert their position in the public realm.

Visibility is important for reducing the mystery of difference, but when it is one-sided it can create an unbalanced set of power relations. Dana Katz describes how the Venice Ghetto was set up as a system for the
surveillance of its Jewish inhabitants 24 hours a day. The counterbalance to this was that the ghetto’s buildings (which soared upwards, due to the limitations on spreading out at ground level) yielded ‘extraordinary city sights’ for those that lived at their heights. These could be contrasted with the constrained views of the Ghetto’s guards (see Figure 7.3).26

These details of space and visibility allow us to view the ghetto as an extreme example of urban space in general. By studying the urban settings of social maps, we can start to grasp aspects of a social group as it is realised in its places of residence, its communal buildings and its places of commercial exchange and of religious worship.

Overall, the study of the street layout of social maps shows that if the street configuration is so contracted that it limits a minority’s view on the world to a fractured, localised fragment, it can still function well to provide both local interactions and city-wide connections. This is dependent on the streets being sufficiently permeable to the area’s courtyards, passages and streets, to ensure on the one hand that the world within it is not too mystified, that it is visible to the passer-by, and on the other hand that there are sufficient connections to the wider expanses of the city.
The politics of universal mapping

The preceding chapters have discussed nearly 50 maps – produced over a span of well over a century – each of which constitutes a social cartography of a singular time and place. Yet they also have in common an impetus to record a geography of an aspect (or many aspects) of society, alongside a drive to produce a graphic depiction that, if not scientific, is at least rigorous within its own terms. Nevertheless, we have seen a variety of ways in which visual rhetoric has been employed (whether implicitly or explicitly) to persuade, to campaign, to censure, or to define aspects of society that need improving in some way. Some aspects of social malaise have disappeared off the map, only to re-emerge, or to transmute into different materialisations of the same problems. We no longer have in cities such as London or New York the type of slums that drew the attention of Engels, Dickens or Jacob Riis, but such slums do continue to exist elsewhere in the world. Indeed, new formulations of slum living are taking shape at an astonishing pace, such that space standards set after the First World War for the United Kingdom are a long-distant dream in an era where so-called studio apartments are seen as fit for living for the twenty-first-century urban dweller. The same goes for disease: cholera is mostly eradicated in developed countries, but is an ongoing problem elsewhere in the world, periodically erupting along with natural disasters or man-made warfare. Tuberculosis has returned as a growing problem in many Western cities and continues to manifest wherever there are clusters of poverty and bad housing.

Disease, poverty, social and ethnic segregation – and indeed crime – are interconnected. Where one occurs, one or more of the other problems will follow. If this book had widened its scope it could have covered other issues still, such as maps indicating environmental inequality, transport barriers, political disenfranchisement and so on. It is evident that the common factor in all of these is the spatial layout of the built environment. By studying maps along with the contemporaneous descriptions of their creators, it has become clear that the spatial isolation of a problem area can exert a powerful influence on urban social problems.

There was a relative dearth of social cartography in the latter half of the twentieth century. This may have been due to a change in focus in analysing urban problems but may also be due to a shift in authorship of maps. Whereas in this book’s older maps the social map-maker was typically one or more individuals embedded in a locality, gathering data on an
entire population and dependent on untutored or self-tutored statistical expertise, by the early twentieth century authorship had shifted to a professional, university-based milieu. Data-gathering was still undertaken in the field, but analysis was more remote, both physically and conceptually. No longer did we see accounts by people who knew each of the data points on the map as living, breathing individuals. This may have been advantageous – with distance comes perspective, yet also a loss of clarity. In parallel to this, the increase in professionalisation of social research meant that the size of social maps could increase concomitantly. Ultimately, social cartography shifted from studying complete, discrete areas to sampling methods that enabled researchers to analyse entire countries and indeed to compare nations. Despite the decline in social maps in the later decades of the twentieth century, social cartography is being increasingly used in a wide variety of governmental and research arenas as well as by the general public. This has stemmed from two important technological changes.

The first change has been the exponential increase in computing capacity, which has meant that governmental bodies from the local to the national can capture an ever-increasing number of data points on their citizens, from crime incidents to place of birth, annual income and patterns of consumption. The second change has been the development of geospatial systems such as Google Maps, with the outcome that anyone with access to a personal computer has at their fingertips an unimaginable amount of information on location, presented in a graphic format that is comprehensible much more readily than the statistical tables of figures that governments have published in the past.

This apparent democratisation of spatial data is at first glance a positive move, yet in many ways this is an incorrect perception. Who owns the data, as well as who owns the means of gathering and presenting the data, will shape how it is presented (and what is not presented). The many issues with distortions of data representation and the problems with interpretation that were apparent in the historical maps are frequently present in contemporary maps too, such as the choice of where to segment the data when drawing up categories or where to draw the boundary around an area in order to determine its social character. In the latter case, the picture of the spatial location of poverty clusters in a city may be distorted by the tendency of poverty to be concentrated in small areas. Similarly, burglary rates might look dramatically different according to where an area's boundary line is drawn.
Mapping specialists will be aware of these problems; they are used to taking account of the spatial variation of data, problems of scale and aggregation and moreover the ecological fallacy already mentioned. Yet less tutored map users may very well gain false impressions of the state of their neighbourhood or city.

Moreover, while in the past governments have produced representations of their cities in order to orientate or control their populations, nowadays the accessibility of geo-information on society gives the misleading impression that such representations are objective, definitive pictures of a given place in time. This is the case not only because of the seductive amplitude of maps, but also because they give the impression that they are comprehensive and that they are essentially truthful. Tools such as GPS (Global Positioning Systems) are typically presumed to be neutral, and their usefulness for humanitarian activities is undoubtedly laudable, but the same tools are employed for the surveillance of individual citizens by governments and by third parties. The dominance of only a handful of mapping systems that are held in the hands of a few companies is an additional problem. There is no simple answer to the conundrum of the balance to be found between the power and utility of mapping systems and issues of personal privacy or loss of power, although the emergence of citizen scientists who gather data on (and in) their own backyards, whether to hold organisations to account or to provide free alternatives to corporate mapping agencies, makes for a possible redress to this imbalance. It is interesting to note in this closing section a recent paper which argues that citizen science constitutes a reversion to the nineteenth-century non-professional participation in scientific endeavours, when many local societies participated in public health campaigns against environmental pollution.

However, this book does not intend to focus on a critique of mapping methods, whether in the past or in the present, but to highlight the significance of spatial, geographical factors that are revealed by maps, even taking account of the limitations of social cartography. Importantly, one of the most constant features of the historical maps presented in this book has been their demonstration of the importance of urban form and spatial configuration in shaping social outcomes: this is repeatedly substantiated by the fact that urban problems frequently persist over many years, even decades. How social cartography will develop in the future, whether it will become the domain of government, large corporations or individual citizen scientists, is a story still to be told.
Notes

2. More recently the United Nation’s Sustainable Development Goals has updated this to 17 goals and 169 indicators.
6. E.W. Soja, Postmodern Geographies: Reassertion of Space in Critical Social Theory (London: Verso, 1989). Banlieue is the term for Paris’s peripheral suburbs. The term ‘banlieue’ is by no means neutral. It has come to describe an especially bleak, disordered, landscape, both physically and conceptually.
11. B. Murtagh and P. Shirbaw, ‘Spatial Segregation and Labour Market Processes in Belfast,’ Policy & Politics 35, no. 3 (2007). In this context, maps are increasingly being used to good effect to change public reading of areas of avoidance, with the Belfast Interface Project recording the historical construction of peace lines as well as progress in their removal https://www.belfastinterfaceproject.org/interfaces-map.
14. The calculation is only a rough indicator, as it does not take account of where people might be able to walk. A 15-minute walk along the streets is likely not to reach as far as the full radius, especially within the vicinity of a railway station, which normally creates interruptions to the continuity of the street network.
22. Scott Ury has shown how bourgeois society, secular culture and Jewish politics came together in Warsaw’s turn-of-the-twentieth-century cafés, providing ‘an open, public space where patrons could meet to discuss cultural affairs, promote communal projects and organize political activities beyond the watchful eye of traditional community leaders and Tsarist officials’.

CONCLUSIONS

28. In parallel, social anthropology has grown as a field of expertise, filling the gap left by the early social scientists by studying single communities in depth.
29. Examples of citizen science projects include *Zooniverse*, which has enabled the public to contribute to research by active participation in gathering data, classifying it and even processing it. A variant on standard citizen science argues for reciprocity between the public and the scientist, so that the former benefits from the scientific findings of the research, such as a project that trains non-literate forest communities in the Congo Basin to use handheld GIS devices for mapping their environment. See more about this in M. Vitos et al., ‘Supporting Collaboration with Non-Literate Forest Communities in the Congo-Basin,’ in *CSCW ’17: Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* (New York: ACM, 2017). Other examples include *OpenStreetMap* and the *Missing Maps* project – a humanitarian project that pre-emptively maps part of the world vulnerable to natural disasters, conflicts and disease epidemics: [http://www.missingmaps.org/](http://www.missingmaps.org/).
30. S. Shuttleworth and S. Frampton, ‘Constructing Scientific Communities: Citizen Science,’ *The Lancet* 385, no. 9987 (2015). Arguably the Temperance Societies were like this, in the sense that they were driven by individuals and local groups more than the organised church.