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DEVELOPMENTALITY: BIOPOWER, PLANNING, AND THE LIVING CITY

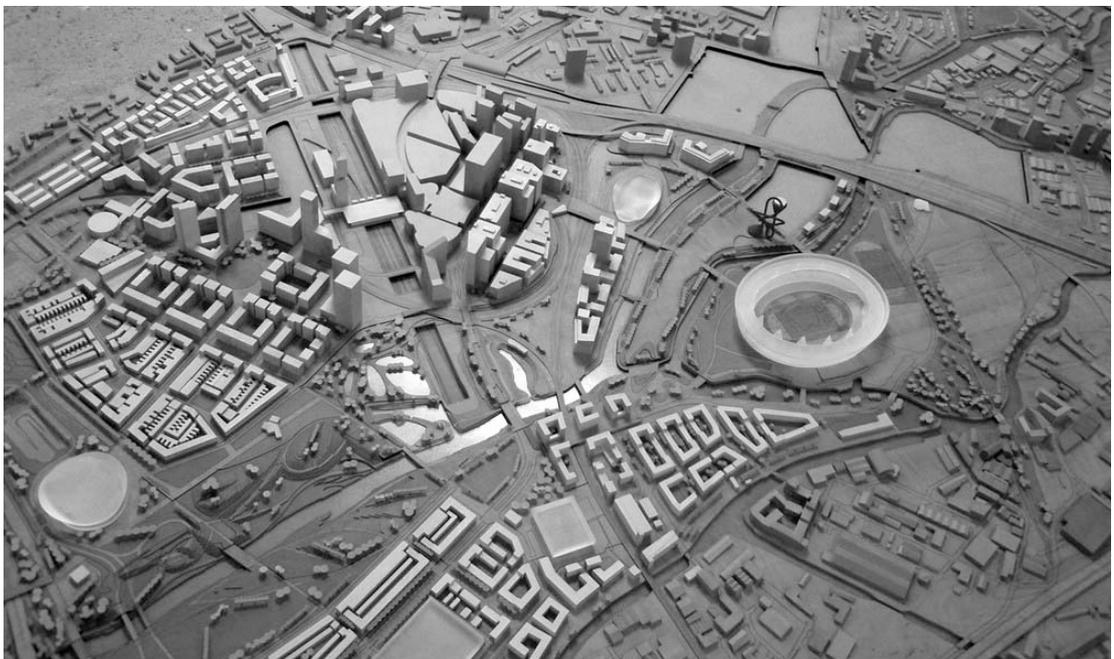


Fig. 1: Pipers model of the Olympic Park, Stratford, East London.

Submitted for the degree of
Doctor of Philosophy in Humanities and Cultural Studies:
May, 2016

Declaration

I, Timothy Ivison, confirm that the work presented in this thesis is my own.
Where information has been derived from other sources, it is clearly
indicated in the thesis.

Signature: _____

Abstract

Our contemporary understanding of the modern city relies on a widely held consensus that its existence is the inevitable and natural outcome of economic and industrial growth. We take the city to be a habitat proper to modern civilisation, as well as an indexical measurement and representation of its development. Following this, the practice of town planning enters as a providential and cultivating force, guiding and articulating a scientific adjustment of the disorder created by industrial urbanisation, in the direction of an ordered and governable environment. This narrative forms the basis for what I will call the ‘developmentality’ of town planning.

This thesis is a comprehensive critique and re-examination of the historical concepts of planning and urbanisation from the standpoint of ‘developmentality’. The thesis takes a critical approach to the history of British urbanisation, going against the grain of conventional planning histories, which tend to emphasise a liberal narrative of teleological progression and achievement, with clear institutional and juridical markers. On the contrary, the following thesis argues for a new epistemology of town planning that emphasises the extent to which it has been a discourse on the very biological nature of the modern city and the biopolitical governance of its spaces.

The thesis argues that this biopolitical condition of urbanism in Britain can be retraced to the sanitary reform movement of the mid-nineteenth century, where an increasingly urgent notion of public health became the rationale for an expanded administrative, engineering, and architectural programme. Elaborated in the Garden Cities and Regional Planning movements of latter decades, biological doctrines are reiterated time and again as the rationale for myriad regulatory interventions and positivist planning theories. By the turn of the twentieth century, town planning not only insists on a therapeutic intervention into the pathological spaces of the city, it also projects a new image of the city: one planned and organised around the urban as a vector of health.

In the elaboration of this programme, planning not only attends to the problem of growth, it also remakes the city in the image of an organic system and recasts the city dweller as an embedded subject within a holistic and technologically serviced milieu. The biological premise and hygienic project of planning extends from the very notion of the normal and the pathological city, through to the infrastructural logic of urbanism as an endless propagation of the prosthetics of modern habitation. Through a series of critical analyses, the thesis will argue for a new reading of the history of town planning, one in which its very locus and legitimacy is to be found in the urban spatialisation of biological concepts.

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I. DEVELOPMENTALITY

I. Introduction

Our understanding of the urban condition is dominated by a discourse on *growth* and *development*. Both terms are imported from biology, and as such, they suggest the characteristics of biological life: the urban is understood to possess the specialised functions of both an organism and an ecosystem, a framework within which the city seeks a teleological form of replication, combination, and ‘evolution’. Architects and planners routinely describe urbanisation as the complex and inevitable outcome of these natural forces – the production of a habitat proper to modern civilisation, as well as an indexical measurement and representation of its development. Such a form of reasoning cannot be dismissed as merely a turn of phrase, nor is it limited to theoretical concerns. On the contrary, it underwrites the work of even the most mainstream and prolific practitioners. In the British context, the architect and planner Sir Terry Farrell has recently expounded his own ontological account of the city, claiming ‘the urban revolution’ to be our ‘latest and most radical stage of evolution’ as a species.¹

Nonetheless, It should come as no surprise that such a narrative of the urban fails to establish its conceptual validity strictly within the terms of evolutionary biology. It brings to its defence an anthropological narrative of architectural history to fill in the gaps of the biological account – one in which the history of cities are recast as the necessary and natural developmental stages of civilisation. Thus, the circumstances of Britain’s eighteenth and nineteenth century industrialisation and urbanisation can be taken quite literally to be the evolutionary blueprints of the modern urban

¹ Terry Farrell, *The City as a Tangled Bank: Urban Design Versus Urban Evolution*, (New York: John Wiley & Sons, 2013) 15. The title of the book is a reference to Charles Darwin’s description of an ‘entangled bank’ in the last paragraph of *On The Origin of Species*. [Charles Darwin, *On the Origin of Species By Means of Natural Selection or the Preservation of Favoured Races in the Struggle for Life* (London: John Murray, 1859) 489.]

phenomenon in general.² This anachronistic account can also be rear-projected, suggesting that cities have expanded and improved continuously, since the dawn of anthropological time, in a series of stages, characterised by measurable changes in the environment, population, technology and politics, leading towards an endless refinement of the built environment – or, as some might say, the end of history.³ In such a positivist framework, a city such as ancient Rome and the contemporary capitalist metropolis are nearly indistinguishable. As Wolfgang Nowak suggests in the foreword to the LSE’s popular tome, *The Endless City*:

There seems to be hardly any difference between problems [the Romans] experienced and those of today’s big cities – waste disposal, drinking-water supply, epidemics, traffic noise, street fights after sports events, environmental pollution...Ancient Rome could be recognized from afar by its pall of smoke.⁴

Nowak’s anecdote conveys the paradox of a timeless project of constant change: the tapestry of human life evolving, punctuated by the monuments of progress. Turning, then, to the future, this conflation of history, design, and biology is echoed in Dejan Sudjic’s contribution to the same volume, when he writes that the city:

[...] must become a machine for relentlessly converting ideas and skills into the necessities for survival and prosperity. Over time it must continually adapt and find new ways to survive, and it must be able to switch from one technology to another to do it [...] There must be something about its past and the traditions and layers of experience that serve to create a kind of urban DNA that can survive in radically different contexts.⁵

The idea of urban DNA is now a common, even banal expression of the conflation of the urban with the biological and there are countless iterations of this narrative serving all manner of political agendas. However, the inevitable and spontaneous ‘nature of the urban’ is also consistently, if paradoxically, paired with human creative agency, retaining a special place for

² A notion of necessary stages suggests that not only does urbanisation happen *this way*, but also, that it has *always happened this way* (and must continue in this manner).

³ Francis Fukuyama, *The End of History and the Last Man* (New York: Free Press) 1992.

⁴ Wolfgang Nowak, ‘Foreword’, *The Endless City: The Urban Age Project*, edited by Ricky Burdett and Dejan Sudjic (London: Phaidon, 2007) 6.

⁵ Dejan Sudjic, ‘Theory, Policy and Practice’, *The Endless City*, 49-50.

the intervention of the professional. Indeed, if ‘growth’ and ‘development’ are conceptually linked – one being the definition of the problem and the other its ostensible solution – then it is within the notion of development that we can see a decisive role for *planning*. The urban appears as a biological phenomenon that can be guided by calculated acts of design, remediation, training, and care. Since the turn of the twentieth century, town planning is seen as a providential and cultivating force, articulating a scientific organisation out of the disorder created by industrial urbanisation, towards a more secure and governable environment. In this sense, planning does not propose to start or stop urbanisation as a matter of absolute control, only to manage and direct the process. The growth of the city itself is not the problem to be solved, but a question of how best to regulate it, or reproduce it in a more efficient, less violent, more organised fashion. In short, urbanisation, to realise its full potential, must be planned.

But how did we arrive at this epistemological intersection of governance and urbanisation, by which our conception of the urban is synonymous with development; a logic through which all physical space becomes potentially ‘developed’, all building programmes are counted towards the health of the national economy, and all creative destruction can be rationalised by the metaphysical notion of a designed and planned evolution? This consensus constitutes what I would call the ‘developmentality’ of town planning: the strong sense in which questions of growth and development have become the fundamental rationale through which all design and regulatory questions of the urban must be filtered. I also want to insist here on the biological origins of the terms. Not simply the direct application of biology, nor merely a scientific interpretation of the doctrine of progress, developmentality describes the deeply *biopolitical* level at which town planning aims to govern and produce the built environment. By this I mean the way in which planning and urban development require a close study of the population, the environment, and the organisation of the city explicitly in terms of their biological and evolutionary performance. The urban may be endlessly growing, connecting, and insinuating itself into daily

life, but it is also this developmentality of planning that provides a guiding teleological narrative to its production.

This thesis aims to critically examine the emergence of developmentality within British town planning, and through this study, to challenge the prevailing historiography of the field, which has largely been understood in empiricist and institutional terms. Beginning with the epidemiological crisis of the nineteenth century city, the thesis will show how the emergence of practices such as ‘public health’ were not merely an act of administrative policy, but also signalled a fundamental shift in the very terms through which the city became knowable and measurable as an object of regulation. The emergence of developmentality becomes legible precisely in the articulation of the city as an object of medicine and biology in the crisis of fevers in the nineteenth century. Subsequently, I will examine the impact of this medico-sociological framework on the infrastructural response to the city in the Victorian era, and the emergence of a discourse on the planned city as a hygienic technology. Throughout this analysis, Michel Foucault’s notion of ‘biopower’ will inform my analysis, as will the historical epistemology of medicine developed by George Canguilhem and other medical and social historians of the last three decades.

Before I attempt to further elaborate a detailed account of the emergence of developmentality, it will be important to give some sense of how the thesis will be argued and its intended place within the existing literature. In the following sections I will first examine the conceptual limitations of the prevailing historiographical consensus and the methodological approach of the thesis. I will then outline the sequence of chapters and the theoretical and practical goals of the paper.

II. Historiography and Method

As the following chapters of this thesis will show, developmentality does not describe the steady historical rise of an explicit agenda, nor is it

merely a stylistic motif within planning or architecture. Rather, developmentality is something like a set of concepts and practices that historically situate the agency of planning linked to urbanisation as an idea informed by a shifting terrain of discursive and political conditions. The developmentality of planning is disjointed, works laterally across disciplines, perhaps even backwards (sometimes relying on out-dated knowledge when it is politically expedient), sometimes embracing experimental knowledge when it pushes forward the goals of administration. As Foucault described this condition in *The Archaeology of Knowledge*:

There are the displacements and transformations of concepts [...] they show that the history of a concept is not wholly and entirely that of its progressive refinement, its continuously increasing rationality, its abstraction gradient, but that of its various fields of constitution and validity, that of its successive rules of use, that of the many theoretical contexts in which it developed and matured.⁶

In this sense, developmentality is not a unified ‘theory’ that I claim to attribute to any individual thinker from the realms of public administration or architectural design, and yet many of these figures contribute in some way to its discursive terrain. Iterations of developmentality are just as evident in the parliamentary records of the 1850s as they are in the surveys and drawings of Garden City and Town Planning schemes of the 1910s. I will argue that despite its contingent qualities, without an articulation of developmentality we are missing an important intellectual and political dimension of the urban, both at the turn of the 20th century, and today.

Reformist Histories

It seems that every introductory text that deals with urbanism – be it public health, architectural history, or urban sociology – includes a short history of British urbanisation that is neatly adapted to its various disciplinary requirements. In each, one finds that the city of the nineteenth century is a kind of *event* in the history of Britain, concomitant with the industrial revolution.⁷ Alongside industry, the event of the city retains an almost

⁶Michel Foucault, *The Archaeology of Knowledge*, translated by A.M. Sheridan Smith (London: Routledge, 2008) 5.

⁷ Peter Hall puts it quite bluntly when he describes the origins of urban growth: ‘Modern urban and regional planning has arisen in response to

mythical status as both the crisis confronted by the social sciences and a primary catalyst of modernity itself. But perhaps because of its importance as a clear historical marker from which other histories proceed, it also tends to play a fairly settled, even potted narrative role. In what we might call the conventional 'reformist' history, we see the crisis of the city give way to a gradual and orderly response, recorded in a chronological sequence of parliamentary acts and virtuous philanthropy. Indeed, conventional histories of British urbanisation have largely treated the emergence of planning as either a reflex of institutional reform, or as an evolution of architectural design. In either case, the urban figures as a problem to which town planning is the logical, even inevitable solution. As the planning historian Margo Huxley writes, 'Many stories of the history of planning take for granted that planning is, could, or should be, A Good Thing.'⁸ Huxley points to the work of Mark Long, who describes in his own work how the problem of 'continuous history' in planning is one that reproduces this false and ultimately teleological binary between opposing forces – one that is redolent of struggles between 'good' and 'evil':

A great opposition is set in play: plan versus non-plan, or reason versus unreason, or the state versus laissez-faire. The history of town planning is then the evolution by which one pole of the contradiction (order) conquers the other (chaos), and the real nature of planning can emerge and present itself.⁹

Despite intellectual shifts within the academy in recent decades and the establishment of new interdisciplinary areas of study, there seems to be a conspicuous reliance on a few key texts, usually secondary sources and surveys, many of which were written twenty to fifty years ago, and all of which tend to provide some version of this reformist narrative of overcoming

specific social and economic problems, which in turn were triggered off by the Industrial Revolution at the end of the eighteenth century.' [Peter Hall and Mark Tewdwr-Jones, *Urban and Regional Planning, fifth edition* (London: Routledge, 2010) 13.]

⁸ Margo Huxley, 'Problematizing Planning: Critical and Effective Genealogies', in *The Ashgate Research Companion to Planning Theory, Conceptual Challenges for Spatial Planning*, eds. Jean Hillier and Patsy Healey (Farnham: Ashgate, 2010) 136.

⁹ Mark Long, 'Planning "Birth" or "Break"? Problems in the Historiography of British Town Planning', Working Paper 18 (Liverpool: Department of Civic Design, 1981) 1-2.

the adversity of the urban. Two of the most popular readers in the British planning curriculum, Barry Cullingworth and Vincent Nadin's *Town and Country Planning in the UK* and Peter Hall's *Urban and Regional Planning* are fifty-one and forty years old, respectively, and each devotes nothing more than an introductory chapter to the formative years of town planning – a span of history that will occupy the entirety of this thesis.¹⁰ Other texts, and other kinds of histories that have been the touchstones of urban study such as Leonardo Benevolo's *The Origins of Modern Town Planning*, Gordon Cherry's *The Evolution of British Town Planning*, or François Choay's *The Modern City: Planning in the 19th Century*, have provided more in-depth critical analysis of the late nineteenth century and put planning and urbanisation into context with economic history, sociology, and public health reform.¹¹ But even here, we see a canon of historical discourse that no doubt expanded the disciplinary engagements with the urban while retaining the linear progressive notion of a history that has only improved, become more critical, more emancipatory, and more sure of its categories of thought and domains of validity. Even Peter Hall's landmark *Cities of Tomorrow* (1988), now in its fourth edition, although novel in its breaking up of urban history into thematic and geographical episodes, still tends to rely on a series of biographical sketches of Great Men as the motor of history, and provides an account of Britain in the nineteenth century that inevitably leads to the necessity of planning.¹² As Huxley has pointed out, even critical histories tend to recuperate the logic of planning in one way or another, attempting to 'save planning from its "dark side" and to indicate ways in which the promise of planning might best be fulfilled.'¹³ These histories might regard themselves as conventional, or critical,

¹⁰ Barry Cullingworth and Vincent Nadin, *Town and Country Planning in the UK, fourteenth edition* (London: Routledge) 2006; Hall and Tewdwr-Jones, *Urban and Regional Planning*, 2010. These titles were originally published in 1964 and 1975, respectively.

¹¹ Leonardo Benevolo, *The Origins of Modern Town Planning* (Cambridge, MA: MIT Press) 1971; Gordon Cherry, *The Evolution of British Town Planning: a history of town planning in the United Kingdom during the 20th century and of the Royal Town Planning Institute, 1914-74* (New York: John Wiley & Sons) 1974; François Choay, *The Modern City: Planning in the 19th Century* (New York: George Brazillier) 1970.

¹² Peter Hall, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design Since 1880, Fourth Edition* (New Jersey: Wiley-Blackwell) 2014.

¹³ Huxley, 'Problematizing Planning', 136.

standard, or progressive, but they seem unable to question the basic premise of planning as a conceptual problem. The result is that we are left only with the ability to argue over how it should proceed. They are ultimately trapped in what Huxley calls a ‘progressivist teleology’:

Setbacks to progress and regulatory cul-de-sacs are noted, but in general, historical milestones in English planning, like the building of Garden Cities or the passing of the 1909 *Housing, Town Planning, Etc. Act*, are staging posts along the way to the 1947 *Town and Country Planning Act* [...], which sets the framework for what are sometimes seen as the halcyon days of post-war English planning.¹⁴

I broadly agree with Huxley in this analysis, but in the larger scope of the thesis I will also argue that there is an important distinction between ‘progress’ and ‘development’ to be made. Nonetheless, Huxley is right to critique these teleological accounts, and further to this, we should be wary of the particular instrumentalisation of the biological and the natural in making these claims. The canon of British urban history still provides us with useful historical accounts and data relating to the context in which planning arises as a technique for the management of the city, but there are very few instances, from Cullingworth & Nadin, to Benevolo, to Hall, where we see any specific effort to unpack the concepts, ways of reasoning, and technical apparatus that gives planning its political and intellectual agency. Even in the most up-to-date editions of *Town and Country Planning in the UK*, Cullingworth & Nadin describe first ‘The Nature of Planning’ and then ‘The Evolution of Planning’ without ever investigating how this naturalism and ‘evolution’ were constructed within the discipline. The field itself appears, like a feature of the landscape, to have simply grown into its role in society unattended.¹⁵

But even more than a landscape, we get the impression that British urban history has been written as the experience and memory of one coherent conscience. On the opening page of Charles Singer's *A Short History of Science to the Nineteenth Century*, he quotes Pascal: ‘The whole succession of men through the ages should be considered as one man, ever living and

¹⁴ Huxley, ‘Problematizing Planning’, 137.

¹⁵ Cullingworth and Nadin, *Town and Country Planning in the UK*, 1-34.

always learning.¹⁶ This cumulative project can be seen as a conceit of enlightenment histories of science, and seeing as urban practitioners increasingly seem to regard their work as a kind of science, it is no surprise that historians of the field often call upon such a consciousness to argue the continuity of purpose and the accretion of knowledge as a linear, developmental process. For instance, the planning historian Gordon Cherry echoes Pascal's sentiment when he argues for a direct continuity between eighteenth century estate building in England and modern town planning practice, writing that, "The exercise of conscious town building was never quite forgotten and the principles of estate development, for residential and other purposes, were taken up from previous generations and handed on."¹⁷ This suggests that late nineteenth and early twentieth century town planning is a renewed form of estate planning, which seems to obfuscate important differences with an anachronistic logic. Although extremely common, the problem with this account is that it transforms a history of the built environment into a kind of meta-biographical project. As Foucault has observed:

Anyone envisaging the analysis of discourse solely in terms of temporal continuity would inevitably be led to approach and analyse it like the internal transformation of an individual consciousness. Which would lead to his erecting a great collective consciousness as the scene of events. Metaphorising the transformation of discourse in a vocabulary of time necessarily leads to the utilization of the model of individual consciousness with its intrinsic temporality.¹⁸

Like Sudjic's tendentious notion of 'urban DNA', this idea of history as an individual conscience has emphasised the way in which planning, narrowly conceived as a history of progressive reforms, takes on a kind of historical 'embodiment' – one that has a birth, a life, and eventually a death – all within the coherent experience of one mind. But beyond literary stylization, such a history is at odds with the multivalent, often parallel and

¹⁶ Charles Singer, *A Short History of Science to the Nineteenth Century* (New York: Dover Publications, 1941) iii.

¹⁷ Gordon E. Cherry, *Urban Change and Planning, A History of Urban Development in Britain since 1750* (Henley-on-Thames: G. T. Foulis & Co. Ltd, 1972) 15.

¹⁸ Quoted from 'Questions on Geography' in *Power/Knowledge: Selected Interviews and Other Writings by Michel Foucault, 1972-1977*, edited by Colin Gordon (New York: Pantheon, 1980), pp. 63-78.

competing discourses that shape the developmentality of planning as it is argued in this thesis. More than a history of ideas – and especially in contradistinction to a timeless collective mind in which knowledge is simply ‘taken up from previous generations and handed on’ – what I am interested in pursuing is a kind of historical epistemology that could establish the basis for developmentality. Lorraine Daston makes the distinction clear when she writes that historical epistemology is:

...not the history of the establishment of this or that empirical fact in, say, the physiology of the mid-nineteenth century, but rather the history of the competing forms of facticity – statistical, experimental, and other – in the physiological institutes and laboratories circa 1870; not the historical judgment as to whether this or that discipline has attained objectivity, and if so, when and how, but rather a historical investigation into the multiple meanings and scientific manifestations of objectivity.¹⁹

Utopia

In addition to the tenuous methodological unity of reformist history and its tendency to evoke the state’s own ‘life of the mind’, there is a related form of discourse that takes this notion to a conceptual extreme – towards a kind of collective dreaming. If ‘reform’ is the rational and progressive improvement of the built environment over time, then it is ‘utopia’ and ‘utopianism’ that historians tend to portray as the aspirational moral compass of this process. Discussions of utopia are commonplace in urbanist journals and introductory readers, with texts from Robert Fishman’s *Urban Utopias in the Twentieth Century* (1977) to David Pinder’s *Visions of the City* (2005) book-ending what is now a tradition of utopian interpretation in urban geography, planning, and architecture.

However radical the utopian might figure in the context of an unglamorous discourse that is otherwise known to be bogged down by issues of politics, policy, and administration, I would like to argue that the approach

¹⁹ Lorraine Daston, ‘Historical Epistemology’, in J. Chandler, A.I. Davidson, and H. Harootunian (eds.), *Questions of Evidence: Proof, Practice, and Persuasion across the Disciplines* (Chicago: University of Chicago Press, 1994) 282-283. Mark Long also writes, ‘With this attention to specificities and differences, discontinuity in planning history ceases to be an embarrassment that must be covered up, and becomes a tool of historical analysis and an object of enquiry.’ [Mark Long, ‘Planning “Birth” or “Break”?’], 8.]

has certain drawbacks that should make us sceptical of its critical value in examining the history of the urban. The first issue is fairly straightforward: is it useful? It seems clear that the current usage in urban discourse was not imported directly from Thomas More's *Utopia* (1516), but from the more directly relevant work of the 'utopian socialists' of the late eighteenth and early nineteenth century, of whom Robert Owen, Charles Fourier, and Saint Simon are included.²⁰ However, we should also remember that these thinkers, each of whom had distinct proposals – social and 'sociological' projects which they hoped to see realised in their lifetimes – were only referred to as 'utopian socialists' in the late nineteenth century, as an epithet in Friedrich Engels' *Socialism: Utopian and Scientific* (1880).²¹ The phrase was explicitly formulated as a way to distinguish the work of Marx and Engels against what they considered to be flawed attempts at socialist ideology.

In a sense, the current use of 'utopia' reclaims or even tries to reconcile the distinction asserted by Engels, and has become the name of a more speculative form of leftist theorisation that attempts to avoid the very ideological splits that led to the appellation in the first place. These strategies reverse the 'utopian' insult by conflating literary tradition with political praxis, even developing utopian-Marxist paradoxes. But even so – even if one were to side with the utopian, we should be able to make a meaningful distinction between the literary utopia of More, or perhaps William Morris's *News from Nowhere* (1890) and the kind of 'utopianism' that is said to be employed in town planning.²²

To take an example, when Edward Bellamy published *Looking Backwards* in 1887, he clearly wrote in the tradition of utopian literature. When Ebenezer Howard published *To-morrow a Peaceful Path to Real Reform* (1898, later retitled as *Garden Cities of Tomorrow* in 1902), he was writing in the tradition of reform, proposing to design and build new towns in the

²⁰ Thomas More, *Utopia* (London: Penguin Classics) 2003. Originally 1516.

²¹ Friedrich Engels, *Socialism: Utopian and Scientific, with the Essay on "The Mark"*, translated by Edward Aveling (New York: International Publishers Co.) 2004. Originally 1880.

²² Published in serial form in *Commonweal* (1890) then in book form: William Morris, *News From Nowhere* (London: Kelmscott Press) 1892.

English countryside.²³ The influence of Bellamy on Howard's work has been widely noted, but the difference between the two books is crucial. *To-Morrow...* is a planning manifesto, followed by a planning association, a joint stock company, and towns such as Letchworth, Welwyn, and Hampstead. The literary, and even the critical or rhetorical merits of *Tomorrow...* are secondary to its context, and its form, as a work of town planning advocacy. Likewise, Patrick Geddes is known to have written about 'Eutopia', the hygienically modified utopia of the regionally planned city, but the actual work that this literary production supported was not purely or even primarily a salvo against the dismal condition of late nineteenth century Britain.²⁴ These texts were the basis for physical city plans, based on historical research, geographical survey, and sociological theory. Likewise, Geddes' book *Cities in Evolution* (1915) cannot be said to have been a significant contribution to the literary canon of utopian writing, but it is routinely described as one of the founding texts of modern town planning.

But this conflation is hardly new and it would be difficult to describe the tendency as merely a categorical mistake. Rather, there is an intentional, even strategic use of 'utopia' as a trope through which to argue planning concerns that is perhaps politically expedient, but becomes increasingly problematic at the conceptual level. John Friedmann, for instance, whose essay 'The Good City: In Defense of Utopian Thinking' (2000) is reproduced in Blackwell's ubiquitous *Readings in Planning Theory*, defines 'utopian thinking' in the opening line as, 'the capacity to imagine a future that departs significantly from what we know to be a general condition in the present.'²⁵ Within such a broad framework, Friedmann has license to describe a tradition that includes otherwise tenuously related 'leftist' figures including the likes of Joseph Proudhon, Ebenezer Howard, Frank Lloyd Wright, Jane

²³ Ebenezer Howard, *To-morrow a Peaceful Path to Real Reform* (London: Swan Sonnenschein & Co., Ltd.) 1898.

²⁴ Patrick Geddes, *Cities in Evolution, an Introduction to the Town Planning Movement and to the Study of Civics* (London: Williams & Norgate, 1915) vii.

²⁵ John Friedmann, 'The Good City: In Defense of Utopian Thinking', in *Readings in Planning Theory, third edition*, edited by Susan Fainstein and Scott Campbell (New Jersey: Wiley-Blackwell) 90.

Jacobs, and Ivan Illich.²⁶ He argues that utopian thinking can be characterised by both critique and constructive thinking, a process of envisioning and becoming that is 'thus not at all about fairytales but about genuine futures around which political coalitions may be built.'²⁷ He underlines this, saying that, 'I wanted it to be understood that utopian thinking, at least so far as planners are concerned, is historically grounded in specific emancipatory struggles.'²⁸ This concrete, pragmatic inversion of the term is further argued by his vision for 'the good city', for which he puts forward 'four pillars': 'housing, affordable healthcare, adequately remunerated work and adequate social provision'.²⁹ Not only are these categories fairly restrained (why not 'full communism' or 'free healthcare'?) but one begins to wonder why such a vaguely defined notion of utopia, which is hardly ever used to describe successful political coalitions or emancipatory struggles should be necessary for contemporary urban planning. Far from a distinct genre or category, it begins to appear more like a value judgement. Friedmann seems to construct utopia as an anachronistic universalist adjective to be appended to any 'progressive' policy. By emphasising the virtue of utopian speculation and detaching it from the technical practices of planning and design, it becomes a critical-motivational mode of thinking that valorises a wish-image of the city.

Of course there is still a value to the projective and the speculative, and we should still take into consideration the unbuilt, but not as a rhetorical argument in defense of 'the good city', as Friedmann would have it. Rather, it is because, as the historian Guy Ortolano writes, 'there is much to be learned from cities that were never built. Not only about how the future was imagined, but also how the present was managed: opportunities that beckoned, obstacles that threatened, and strategies available to deal with them both.'³⁰ It is not so much their status as collective political dreams that

²⁶ Friedmann, 'The Good City', 91

²⁷ *Ibid.*

²⁸ *Ibid.*, 92.

²⁹ *Ibid.*, 101.

³⁰ Guy Ortolano, 'Planning the Urban Future in 1960s Britain.' *The Historical Journal*, Vol. 54, Issue 02. Cambridge: Cambridge University Press (June, 2011): 482.

unbuilt proposals find their value, but rather in the way they can reflect the very rules of discourse and political agency of their time, even in their failure. Indeed, the tracing of these rules of engagement point toward a quite different level of inquiry into planning discourse, one that Friedmann actually suggests himself as he stretches the notion of the utopian beyond meaningful recognition. He writes that, ‘...city builders need not only blueprints for their work, but *guiding, normative images*.’³¹ It might seem as though I have been thus far arguing for our attention to be turned towards the blueprints that Friedmann mentions, as opposed to the guiding normative images. But on the contrary, and much more important to this thesis, is the distinction to be made between the normative and the utopian. It is precisely this notion of the normal – and not the *ideal*, with which Friedmann’s essay is actually preoccupied – that is of consequence for planning.³² Architectural and policy proposals, social theories and organisational principles concerned with the built environment, projections as they may be, are much more clearly understood in terms of their negotiation of normativity, than of their utopian character. This is because what is actually consequential within a conceptual category such as developmentality is not the history of some kind of biological planning ‘eutopia’ that has been envisioned and held up to us as an ideal, but how the very substance of such visions (of which there are many in the history of British urbanism) has been shaped by the normative rules of biological thought, and how this normativity came to prevail over other forms of reason.

Towards Developmentality

It is precisely towards the sciences, and not the literary canon of the built environment that we should turn our attention in order to understand the agency of developmentality in nineteenth century thought. In order to get at the historical and political conditions of ‘growth and development’ as a condition of the urban, we must regard the history of planning not as the obvious answer to a self-evident question, nor as a virtuous endeavour in

³¹ Friedmann, ‘The Good City’, 93. Italics are author’s own.

³² Even here, we should be able to make a meaningful distinction between ‘ideal’ and ‘utopian’; however, one is not forthcoming in the majority of planning literature.

search of utopia, but rather as the production of a contingent epistemological project – one in which technical practices such as statistical method, epidemiology, maps, street widths, and sewer pipes are all points of contention and discourse amongst competing notions of the urban and the proper domain of planning. Furthermore, it should be said that within such an approach, the map, the statistic, and the sewer pipe find equal footing with the thoughts and acts of Great Men. In this sense, I am interested in both a history of the discourse and a history of the technical systems of planning. To be clear, this is not to say that I will employ an extensive history of technology.³³ Rather, what I mean by a history of the city as a technical system is a history of tools and techniques – or perhaps even technocracy – as a fundamental quality of developmentality. It is not that a more thorough history of the water closet will clear up heretofore misunderstood passages of British urbanization, but that modern sciences, engineering, and medicine all figure as powerful agents of urban change that are fundamentally technical, rational, deeply spatial and ultimately consequential for the design and regulation of the built environment.³⁴ This thesis will argue that there is a distinct investment in the promise of scientific practices to address social and biological problems. It is scientific and technological *positivism* (and not merely idealism) that underwrites developmentality. As Paul Rabinow has argued, we should regard ‘urbanism as a self-consciously scientific discipline’

³³ The history of technology as an urban and architectural problem has its own historical genealogy. See: Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace & Company, Inc.) 1934; Sigfried Giedion, *Mechanization Takes Command* (Oxford: Oxford University Press) 1948; Reyner Banham, *The Architecture of the Well-Tempered Environment* (London: Architectural Press) 1969.

³⁴ In addition to technology in general, ‘Urban studies’ broadly construed, has also addressed the notion of ‘infrastructure’ in important ways. For over fifteen years, the standard text has been Steven Graham and Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (London: Routledge) 2001. There have been many important intervening texts, but recent examples such as Keller Easterling, *Extrastatecraft: The Power of Infrastructural Space* (London: Verso) 2014, and Benjamin Bratton, *The Stack: On Software and Sovereignty* (Cambridge, MA: M.I.T. Press) 2016, have begun to extend this discourse in important ways.

if we are to understand the role of planning discourse and the status of the urban today.³⁵

III. Chapter Plan

I.

This first chapter has attempted to introduce the notion of ‘developmentality’ as a condition of urban discourse that structures the descriptive terms and modes of intervention into the crisis of the city in the nineteenth and early twentieth century. I have argued that developmentality is the general framework through which urbanists have posed the implicit questions: how does one regulate growth, how can we cultivate development? The history of British urbanisation provides us with a number of compelling episodes through which to articulate the shifting landscape of developmentality, drawing on problems of epidemiology, statistical analysis, cartography, engineering, architectural design, and sociology – all fields that at some point were confronted with ‘the city’ as a problem to be worked on.

In pursuing this argument, I have thus far provided a very brief overview of an extremely diverse field of discourse. Many different disciplines compete for explanatory power of the built environment, and overly general terms such as ‘built environment’ have been invented to try to mediate between these fields. Nested somewhere between the largely sociological ‘urban studies’ the architectural ‘urban design’, and the geographic field of ‘urban geography’ is the fairly narrow discipline of ‘urban history’, the British sub-field of which is narrower still. I have tried to identify some of the specific problems, shared by these fields, in their account of the nineteenth century city. In so far as I have tried to define developmentality as a ‘logic’ or ‘condition’ of planning, it is also an idea that does not properly belong to any one disciplinary account, rather it is a commentary on the underlying concepts and spaces of legitimacy that become legible at the very edges of

³⁵ Paul Rabinow, ‘Ordonnance, Discipline, Regulation: Some Reflections on Urbanism’, *Humanities in Society*, 5 (3-4) 1982, 267.

disciplinary knowledge, and at the intersections and confrontations between disciplines and disciplinary norms. As Foucault writes, ‘Discursive practice does not coincide with the scientific development that it may give rise to; and the knowledge that it forms is neither an unfinished prototype nor the by-product to be found in daily life of a constituted science.’³⁶ In this sense, I have attempted to outline developmentality as a discursive practice that is deeply embedded in positivist practices, and yet not exhausted by a strictly disciplinary definition.

2.

Chapter 2 will build on this notion of developmentality as a discursive practice, dealing more explicitly with the relationship between Foucault’s notion of biopower and my own neologism. In this chapter I try to emphasise the relationship between the body, the population, and the city as figures in regulatory discourse, and the way that biopower might help us to understand and frame these concerns in the context of the history of British planning. In examining Foucault’s work, we will see that the question of the city is not merely a possible category into which a concept of biopower can be imported, but that it has been integral to the emergence of biopower from the very beginning. Another concept that I will try to bring into the analysis via Foucault is that of ‘spatialisation’. Whereas thinking through biopower will help make sense of the specific connotations and distinct features of what I am trying to formulate as ‘developmentality’, the notion of spatialisation further emphasises the sense in which discussions of the city are necessarily spatial – not just in the descriptive sense, but in the epistemological sense of how knowledge is conditioned, how it operates, and how it confronts problems of the city.

Given the fairly extensive elaboration of theories of biopower in the last few decades and the weight of discourse around the terminology, one might wonder at the usefulness of maintaining the term ‘developmentality’ throughout the thesis. Nonetheless, it has become increasingly evident in writing this paper that it was important to distinguish the specificity of

³⁶ Foucault, *Archaeology of Knowledge*, 203.

planning discourse at the turn of the 20th century, its particular adherence to a doctrine of development and not simply of the ‘governmentality’ of discipline and security. Biopower, as it is theorised today, has been useful in a broad domain of inquiry, concerned with issues such as the politics of medical institutions, bioinformatics and surveillance, not to mention gender identity and sexuality. It would have been a nearly impossible task to argue for a definitive re-orientation of such a pervasive and contested terminology. Nonetheless, the debt to Foucault will be important, and by taking the time to elaborate on the terms, later sections of the thesis become much easier to decipher.

3.

Many histories of planning have gestured to the sanitary crisis of the nineteenth century as the origin of planning practice in Britain, mainly substantiated by the work of Edwin Chadwick and sanitary reformers of the 1840s–60s. What is overlooked, though, is the way in which this ‘discovery’ of vice and poverty in the Metropolis and the industrial towns of Great Britain did not reveal a situation that was legible or comprehensible *a priori*. In fact, its inscrutability was one of its defining characteristics. Chapter 3 will examine this condition of the city of the early nineteenth century as the first domain of developmentality, where the intersections of growth, poverty, and disease form a spatialisation of concepts and descriptions. By this I mean that *looking* at the city in the nineteenth century has a certain significance (who, how, and in what context), and that the construction of a language around this particular form of investigation will come to form the foundations of a new discourse on the city. The first characteristic of this will be shown to be the concern for the ‘population’ and how the notion of the ‘normal’ and the ‘pathological’ come to structure knowledge of the city. Further to this, the chapter will go on to show how the extrapolation of medical and biological notions of space, disease pathogenesis, and physiological function begin to make the city a knowable object – one that, once made measurable, can be shaped.

4.

The 'work' of sanitary reform in the nineteenth century is both conceptual and material, and if chapter 3 is primarily concerned with the formation of discourse around the city, in Chapter 4 I will elaborate on the physical and spatial consequences of this framework. I will first show how the articulation of a lexicon around the city also serves to delineate what is included and excluded in its analysis. From here, a strong definition of 'location' emerges, in which the 'pathological' city can be identified and addressed.

This chapter will be particularly interested in articulating how the implementation of sewerage and housing reforms not only respond to a crisis of health, but how they actually begin to shape the very definition of the city as an organised system, intervening in the on-going dialectic between organism and mechanism, nature and culture. I will show how the policy formations, the medical knowledge, and the technical repertoire of reform begin to produce a new routine of comprehensive management of the urban environment. Finally, the chapter will argue for a distinctive notion of 'the urban' that emerges from late nineteenth century housing policies, focused on its reproducibility. More than a collection of byelaws, 'the urban' appears as a unit of infrastructure, through which strategies of developmentality can be achieved.

5.

In Chapter 5 there is a distinct shift. The developmentality that emerged in the city of the nineteenth century was primarily concerned with how the city, as a vector of disease, could be contained and regulated. By the end of the century, a new concern seems to emerge. This was, 'to what extent can the city itself be designed as a vector of health?' Chapter 5 deals with the invention of the Garden City and the disciplinary shifts that this idea introduces into the discourse. For many historians, the history of British planning begins with the Garden City, and in institutional terms, this is largely true. But what this chapter will explicitly argue is that without an understanding of the epidemiological and physiological discourse on the sanitary city, the specific agency and epistemological articulation of the

Garden City is entirely obscure. Rather, as I will show, the Garden City acts as an important organising object around and through which the techniques of the built environment are thinkable as a coherent discipline. In this sense, the logic of developmentality is also reassembled, or reterritorialised around new institutions and new professional mandates. However, what I will also endeavour to show is that the Garden City, far from being the final culmination of a slowly building consensus, is but one iteration of the developmental apparatus (a fleeting one at that) but still crucial for the establishment of planning as a coherent regulatory activity.

6.

Indeed, what I would like to argue in Chapter 6 is precisely that the Garden City is completely reconfigured in the work of contemporary thinkers of the 'regional' concept of planning. This chapter examines the first decades of the twentieth century as a period of drastic conceptual elaboration of the developmentality of the city. Rather than the *intensive* settlement of space, regional planning discourse focuses on the *extensive* temporal and spatial domains of planning. The chapter examines a number of arguments made by Patrick Geddes and his importation of a whole host of new terms from evolutionary biology, geography, and French sociology. Many planning histories regard garden city ideas and regional planning as both intrinsically linked in the origins of 'town planning' as a British institution, but what I would like to argue in this chapter is that the regional discourse is both a reorganisation of the discipline and a distinctive deployment of developmentality that simultaneously attempts to consolidate disciplinary expertise while exploding the very boundaries of its discourse.

We end the historical analysis of the thesis with regional planning, not because it is the terminus of developmentality, which gives way in the post-war period to a new conceptual basis for urbanism, but because it is clear that, like much of the conceptual apparatus of the post-war period, we are still grappling with, even intensifying many of its claims. The regional planning discourse is but an introduction to contemporary concerns around the

environment, planetary urbanisation, and the entrenchment of techniques of biopower.

7.

The thesis ends with an assessment of my own efforts to establish a new conceptual organisation within urban discourse and a review of the structure and methodology of my argument. I will point to a number of historical and epistemological links between turn of the century planning discourse and contemporary theorisations of ‘complexity’ that might serve as the basis for further investigation into developmentality. These new areas of concern address ostensibly more ‘advanced’ problems: sophisticated data computation, climate change, and the anthropocene, but my intention, by the end of the thesis, is that it will be clear that these contemporary problems can be disentangled – if not by any means solved, certainly better understood – through a historically grounded notion of developmentality. The present conjuncture is still preoccupied by the questions of the population, its management and cultivation, and the role of the built environment as both a mediator and catalyst of biopower. I will end with a reflection on this condition, in which the urban continues to shape political life as a biological problem, and where the question of life and the question of the city are integrally linked.

2. BIOPOWER AND THE SPACES OF DEVELOPMENTALITY

I. Introduction

The first chapter set out to establish that British town planning has been characterised by ‘developmentality’ – a condition in which biological principles have come to define the historical, spatial, and political scope of urbanisation and its relation to planning. Furthermore, it became clear in the course of articulating this condition that an alternative reading of the British historiography of the urban would be required. But in theorising town planning in terms of developmentality, I need to not only define this concept in its historical context but also within the context of contemporary debates on urban governance. If the last chapter introduced the developmentality of planning in contradistinction to conventional planning histories, this chapter tries to establish a genealogy of this alternative reading and how it will intervene in the discourse.

My effort to establish an interpretation of planning history that acknowledges the fundamental impact of the life sciences is in many ways indebted to Michel Foucault’s work on the notion of biopower. This is a concept he introduced in the 1970s to describe the ‘rationality’ of western governments by the end of the eighteenth century and their emphasis on the management of society at the level of the biological conditions of life. Foucault describes this shift as the historical emergence of a logic in which biological existence is reflected in political existence.³⁷ Foucault identifies two polarities to biopower: the discipline of individual bodies through an *anatomopolitics*, and the security of the general population ensured by *biopolitics*.³⁸ In their combination, Foucault recognises a new episteme in the logic of governance.

³⁷ Michel Foucault, *The History of Sexuality Volume I: The Will to Knowledge*, trans. Robert Hurley (London: Penguin Books, 1998) 142.

³⁸ *Ibid.*, 139.

In the previous chapter I tried to show that developmentality operates within the same schema, establishing its rationale for planning through a doctrine of the city as the natural habitat of man – a space in which the process of urbanisation must be managed through biometrics, infrastructure, and a developmental teleology of complexity, growth, and evolution. If biopower is the reflection of biological existence in political existence, then developmentality is the rationale by which the city itself becomes both an instrument of biopower and its ultimate teleological goal. In this chapter, I will attempt to establish the theoretical implications of developmentality for town planning by way of an analysis of the concept of biopower. We will find that the very idea of biopower is directly linked to the crisis of the city in the nineteenth century. This link is not duly foregrounded by Foucault, nor is my interpretation common in the prevailing theoretical appropriations of biopower, but it is one that will become increasingly evident within my thesis and its analysis of British planning. Further to my initial interpretation of biopower, we will also look to Foucault's notion of spatialisation as a model to articulate a diagram of power within the biopolitical city. First used in 1963 in *The Birth of the Clinic*, spatialisation is one of the many aspects of Foucault's position that knowledge and power always relate asymmetrically.³⁹ In this diagramming of spatialisation we begin to think of developmentality as a circulation of signs between the biological body of medicine, the social body of politics, and the built environment of the city.

In the final part of the chapter, I address interpretations of the biopolitical city in terms of various medical, geographical, and sociological frameworks. I will focus on the spatialisation of biological thinking within the figure of the city, while drawing attention to the limits of contemporary biopolitical debates and how this might be addressed in the thesis.

³⁹ Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (London: Routledge) 2003. First published in French in 1963.

II. Biopower and Biopolitics

There is, therefore, a spontaneous and deeply rooted convergence between the requirements of *political ideology* and those of *medical technology*.

- Michel Foucault, *The Birth of the Clinic*⁴⁰

Every reflection on biopower repeats the account of Michel Foucault's definition, but we retrace it here to establish the origins of the word and also to remind us of the context in which Foucault's thoughts on biopower emerge, namely within a series of reflections on social medicine and the city. Since this early trajectory, biopower and Foucault's related terminology have been used in the service of a broad number of agendas, only some of which are consistent with his initial theorisation and even fewer of which are relevant to an analysis of planning. In the following section, I provide an account of the concept as a concise way of articulating the fundamental level at which political power has come to operate within the logic of biology and medicine.

Foucault's account of biopower comes in a number of publications and lectures in the 1970s. Although he formulates the arguments behind the concept of biopower in lectures as early as 1974, the first time it appears in publication is in 1976, in *The History of Sexuality, part I: The Will to Knowledge*. Here, Foucault introduces the concept in the context of his critique of the politics of sexuality, having put into suspension notions such as sexual domination, repression, and desire as they have developed in the nineteenth century. In 'Part Five: The Right of Death and Power Over Life', biopower is introduced as a way of characterising the mode and deployment of political power in nineteenth century Victorian society, not as a show of unilateral force, but as a network of 'force-relations' between individuals, institutions, and social codes. He describes this historical moment by comparing the rationale of the sovereign – in which the power to rule is expressed by the ultimate right to kill royal subjects – to the increasing liberal concern for regulating and enabling *life* through the management of the

⁴⁰ Foucault, *The Birth of the Clinic*, 63.

body, the prevention of illness, and the policing of the population. As

Foucault explains:

Power would no longer be dealing simply with legal subjects over whom the ultimate dominion was death, but with living beings, and the mastery it would be able to exercise over them would have to be applied at the level of life itself; it was the taking charge of life, more than the threat of death, that gave power its access even to the body.⁴¹

Through this ‘taking charge of life’, sexuality, as well as society in general, is kept within the bounds of a normative framework. Although this initial account from *The History of Sexuality* is framed by the investigation of sexuality and its entrenchment in the family and the state, biopower is already characterised as a general principle of governmental reason, in which the regulation of sexuality is a central, but not an exclusive domain. What is new about the rise of biopower is that sexuality, among other fields, can be judged not primarily for its symbolic or moral character but for its centrality to the regulation of the species, the race, the population, and other categories organised at the level of biological life. As Foucault suggests, ‘Western man was gradually learning what it meant to be a living species in a living world, to have a body, conditions of existence, probabilities of life, an individual and collective welfare, forces that could be modified, and a space for which they could be distributed in an optimal manner.’⁴² This ‘gradual learning’ is based on the development and use of statistical techniques of observation, derived from the study of individuals, quantitatively representative of the condition of masses of individuals – that is to say, *populations*.

The political abstractions identified by biopower are the key to its originality, the status of which Foucault is at great pains to articulate. Where governments turn their attention towards the population, the environment, and statistically formulated problems of the birth, death, reproduction, age, race, diet, disease, spatial distribution, and other bio-informatic categories is precisely where they depart from previous epistemes of power. In his lectures from 1975-76, Foucault suggests that this perspective, accompanied by the refinement of the disciplinary and statistical vocabulary, forms an essential

⁴¹ Foucault, *The Will to Knowledge*, 142-143.

⁴² *Ibid.*, 142.

component to the recovery and maintenance of power in the wake of the social transformations of the eighteenth century:

It is as though power, which used to have sovereignty as its modality or organizing schema, found itself unable to govern the economic and political body of a society that was undergoing both a demographic explosion and industrialization. So much so that far too many things were escaping the old mechanism of the power of sovereignty, both at the top and at the bottom, both at the level of detail and at the mass level.⁴³

In *The History of Sexuality*, we can see that biopower specifically problematizes this question of ‘the level of detail’ and ‘the mass level’: for Foucault, there is a distinct relationship between what he calls the *anatomopolitics* of the body and the *biopolitics* of population.⁴⁴ The former is characterised by a set of disciplines, which compel the ‘body as a machine’ to adhere to certain rules – of behaviour, of hygiene, etc. – while the latter is composed of a series of regulatory controls focused on the ‘species body’ – indirect manoeuvres such as parliamentary acts, social reforms, and spatial interventions – which ensure and extend the disciplines. Life and the body are recast as the central concerns for governance:

The disciplines of the body and the regulations of the population constituted the two poles around which the organization of power over life was deployed. The setting up, in the course of the classical age, of this great bipolar technology—atomic and biological, individualizing and specifying, directed toward the performances of the body, with attention to the processes of life—characterized a power whose highest function was perhaps no longer to kill, but to invest life through and through.⁴⁵

Anatomopolitics

Anatomopolitics, works on the individual through techniques of observation, regimentation, and *dressage*, or training.⁴⁶ The obvious examples here would be the ‘docile bodies’ created by the educational, military, and penitentiary institutions described in one of Foucault’s most popular books,

⁴³ Michel Foucault, *Society Must be Defended: Lectures at the College de France 1975-76* (New York: Penguin, 2004), 249.

⁴⁴ Foucault, *The Will to Knowledge*, 139.

⁴⁵ *Ibid.*, 139.

⁴⁶ Michel Foucault, *Discipline and Punish: The Birth of the Prison*, translated by Alan Sheridan (London: Penguin Books, 1977/1991) 136. First French edition, 1975.

Discipline and Punish (1975).⁴⁷ However, aside from these institutional examples of discipline, one of the lasting images of anatomopolitics presented in *Discipline and Punish* is neither a prison nor a camp, but rather a town under the state of exception occasioned by the plague.

Opening the chapter on ‘Panopticism’, Foucault’s now well-rehearsed description of the plague administration and its precise rituals of enclosing each person in their house, the prevention of unnecessary movement, the killing of stray animals, the protocols for dealing with the dead, the cleansing of interiors, and the documentation of each of these steps in official literature illustrates the level at which power sought to defeat the plague by a rigorous control of the body and the environment:

This enclosed, segmented space, observed at every point, in which the individuals are inserted in a fixed place, in which the slightest movements are supervised, in which all events are recorded, in which an uninterrupted work of writing links the centre and periphery, in which power is exercised without division, according to a continuous hierarchical figure, in which each individual is constantly located, examined and distributed among the living beings, the sick and the dead - all this constitutes a compact model of the disciplinary mechanism.⁴⁸

To highlight the identity of this disciplinary strategy, he contrasts this response to the plague with the policy of banishment and exclusion used to deal with lepers: one is managed through a methodical quarantine, while the other is externalised entirely from society. Plague administration is exemplary of the principle of discipline for Foucault because it does not limit the discipline of anatomopolitics within the confines of a particular institution, but rather it portrays the swarming of that logic into the general field of the town. In contrast to the expulsion of leprosy, the plague is subjected to vigilant and exacting protocols of administration from within the territory of society. As Foucault suggests:

⁴⁷ See also: Michel Foucault, ‘The Eye of Power: A Conversation with Jean-Pierre Barou and Michelle Perrot’, in *Power/Knowledge, Selected Interviews and Other Writings 1972-1977*, ed. Colin Gordon, trans. Colin Gordon, Leo Marshall, John Mepham, Kate Soper (New York: Pantheon Books, 1980) 146-165.

⁴⁸ Foucault, *Discipline and Punish*, 197.

In order to make rights and laws function according to pure theory, the jurists place themselves in imagination in the state of nature; in order to see perfect disciplines functioning, rulers dreamt of the state of plague. Underlying disciplinary projects the image of the plague stands for all forms of confusion and disorder; just as the image of the leper, cut off from all human contact, underlies projects of exclusion.⁴⁹

Even if the plague administration was a kind of dream of discipline, it was, in its time, a state of exception in which the full force of disciplinary power would only be temporarily mobilised. By contrast, the centrality of discipline by the late eighteenth century reflects the slow movement of these techniques – of observation, division, notation, and quantification – from the temporary injunction to the permanent adaptation and refinement of the daily governance of the town. Foucault argues that this shift is embodied by the ‘architectural figure’ of Jeremy Bentham’s panopticon.⁵⁰ I return to Bentham’s panopticon in subsequent chapters, but suffice to say here that the form of the panopticon is one that attempts to architecturally demarcate the principle of discipline in a kind of utilitarian political geometry, which can be extrapolated to any number of institutional applications. It is a diagram, ‘an idea in architecture’ as Bentham writes.⁵¹ Foucault uses the panopticon to think through the institutionalisation of discipline as a general value, not just for the prison but for the city.

Biopolitics

Foucault’s second category, biopolitics, is derived from disciplinary practices – if not literally through the architecture of the panopticon, then through the refinement and propagation of its routines. It is through the vigilant notation of activity evident in the plague administration and normalised in the daily work of physicians and police that a basis for the administration of the population is formed. Rather than acting directly on the body, biopolitics is leveraged by taking the findings, the minute social facts of the disciplinary mechanisms and finding within them a taxonomy of social laws: birth and death rates, the conditions of streets and dwellings, the

⁴⁹ Foucault, *Discipline and Punish*, 198-199.

⁵⁰ *Ibid.*, 200.

⁵¹ Jeremy Bentham, *The Panopticon Writings*. ed. Miran Bozovic (London: Verso, 1995), 2.

distribution of fever, and the composition of the family. In this sense, biopolitics is organised around *security* rather than *discipline*. If discipline operates at the level of the body, where individuals are trained in a certain comportment and habit, security captures the sense in which power employs peripheral techniques, indirect forms of influence to regulate and inculcate the productivity, health, and indeed the biological security of the population.

Through biopolitics, patterns of life in the population emerge, constituting a level of knowledge and power that is not reducible to the circumstances of the individual. The population appears as a series of biological factors and these factors become a legitimate terrain for politics. It is through this stratum of analysis that biopolitics works on the social body and becomes a permanent, rather than an exceptional part of strategic governance.

Acknowledging the move from the exceptional to the everyday, Foucault writes in *The Will To Knowledge* that, ‘...the fact of living was no longer an inaccessible substrate that only emerged from time to time, amid the randomness of death and its fatality; part of it passed into knowledge’s field of control and power’s sphere of intervention.⁵² And to be clear, by *life*, we distinctly mean the life that is implicated in biology and medicine, which were professionalised at the beginning of the nineteenth century. To illustrate this, Foucault reflects on the semantic and conceptual shifts in a lecture from 1978, saying that ‘...men are no longer called “mankind (*le genre humaine*)” and begin to be called “the human species (*l’espèce humaine*).” With the emergence of mankind as a species, within a field of the definition of all living species, we can say that man appears in the first form of his integration within biology.’⁵³

⁵² Foucault, *The Will to Knowledge*, 142.

⁵³ Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France 1977-1978* (Basingstoke: Palgrave Macmillan, 2009) 75.

Biopower and Medicine

The rhetorical and political agency of biopower is above all founded by its integration with biology. But as we have seen in the examples that Foucault brings to bear on the concept, biology forms its first transactions with politics specifically through medicine. Although he might argue that it is never the exclusive domain of biopower, Foucault bases much of his argument on the increasing imbrication of medicine and politics, throughout the nineteenth century and up to the present. Foucault had written about the politics of medico-biological life years before in *The Birth of the Clinic*, where he went into great detail describing the archaeological shifts in knowledge created by the era of 'clinical reason' in eighteenth century France. Although the book primarily deals with the enclosed space of the clinic and clinical rationality, in light of his analysis in *Discipline and Punish* it is not hard to make the connection between the two books and the role played by clinical medicine in the emergence of a general anatomopolitics. His later theorisation of biopolitics has an early intimation in *The Birth of the Clinic* when Foucault dedicates a short chapter to the 'political consciousness' that emerges in the context of epidemic disease and the problem of population. In 1974, nearly a decade after *The Birth of the Clinic*, it seems that population and the public health was back on his mind, as he dedicates a series of lectures at the Institute of Social Medicine in Rio de Janeiro to the subject of modern medicine, social medicine, and the emergence of the modern hospital.

Delivered in October 1974, it is in the second Rio lecture that Foucault first refers to 'biopolitics', stating that 'For capitalist society, it was biopolitics, the biological, the somatic, the corporal, that mattered more than anything else. The body is a biopolitical reality; medicine is a biopolitical strategy.'⁵⁴ This is echoed in his lecture from the College de France a year and a half later when he says, 'Medicine is a power-knowledge that can be applied to both the body and the population, both the organism and biological processes, and it will therefore have both disciplinary effects and regulatory

⁵⁴ Michel Foucault, 'The Birth of Social Medicine', in *Essential works of Foucault 1954 – 1984, Volume Three: Power*, ed. James D. Faubion, trans. Robert Hurley et al. (London: Penguin Books, 2000) 137.

effects.’⁵⁵ In the same year, his text ‘The Politics of Health in the 18th Century’ reflects again on the political and institutional dimension of medicine’s distribution of power. Conversely, one could look at the strategies of biopower as themselves a kind of political medicine. They appear as a form of therapeutics, designed to be corrective, instructive, and improving, while the increasing imbrication with new levels of regulation and administration take the form of a preventive medicine.

Biopower and the City

The integral relationship between biopower and the politics of medicine is frequently referenced in the critical discourses of the medical humanities, the history of science, and activist struggles related to the medical industry, hospitals, prisons, and schools. However, in the history of planning, the link with biopower is also particularly consequential but comparatively under-utilised, especially in the British discourse. However, we can already suspect how biopower might operate in a planning context, projecting onto and intervening into the built environment to indirectly influence the habits and conditions of life for both individuals and populations: it is the environment itself that is invested with the government of bodies and populations, not the injunction of sovereign law.

Take this one step further. On the one hand, it is commonplace in town planning histories to gesture towards public health reforms of the nineteenth century as a seminal era in which concern for the environment of the town leads eventually to the development of town planning as an inevitable corrective within a system of natural checks and balances.⁵⁶ However planning histories have rarely investigated the conceptual implications of such a claim, or the ways in which a biopolitics of health might have fundamentally structured thinking and discourse in planning. On the other hand, in Foucault’s formulation and in the larger field of medical humanities, while the city is acknowledged, there is an uncertain engagement with it as a figure, where biopower might or might not have a

⁵⁵ Foucault, *Society Must be Defended*, 252.

⁵⁶ This being the conventional wisdom that frames most introductory texts on planning that I referred to in Chapter 1.

constitutive relation to the nexus between health and the city. The first discourse recognises the formal elements of the argument without engaging with its theoretical implications, while the latter discourse has failed to consolidate what it already knows into a simple principle, which is that the concept of biopower is constitutively grounded in the crisis of the nineteenth century city.

Without reverting to the just-so story of the inevitable rise of planning, nor to an overly abstract account of the concept of biopower, we can begin by changing the terms of engagement from the very start by situating biopower as the intersection of a diverse set of techniques and modalities of governance, all of which converge on the problem of governing life in cities. Just as the centrality of public health and hygiene can not be anything less than the force-relations of biopower, so too must biopower be seen to engage with a specific set of problems. Biopower's attention to 'life' is not geared towards life-in-general but rather to the regulation of perpetual life-in-crisis or life under threat: this is definitive of life in the city in the nineteenth century. It is the material conditions of the city that make crisis permanent and it is strategies of biopower that shape the response to it.

In terms of this thesis, asserting the constitutive relationship of biopower to the city in the nineteenth century allows us to reframe the discourse on planning as one that employs a number of anatomopolitical and especially biopolitical strategies to produce a new description of the city, as well as to shape its regulation. These strategies of public administration and design are fundamentally motivated by problems that are defined, measured, and dealt with in terms of the body, the environment, and the living city. Developmentality takes biopower to be the basic framework through which public health interventions, parliamentary reforms, and ultimately urban design rationalise and justify their work.

As I implied with the example of the plague town, to make these claims does not necessarily go against what Foucault has already said about biopower. Although the books published during his lifetime give us a limited

scope of how he viewed the operation of biopower, there are many points in his lectures, now widely available, where he seems to acknowledge the convergence of biopower with concerns regarding the ‘problems of the town’. The first notable example of this brings us back to the Rio lecture transcripts of 1974. In the second lecture, ‘The Birth of Social Medicine’, Foucault provides a commentary on the modern politics of medicine, which he divides into three distinct and occasionally overlapping arenas: State Medicine, Urban Medicine, and Labour Force Medicine. Foucault tries to locate them geographically by attributing state medicine to a German model, urban medicine to a French, and labour force medicine to the English. In his introduction to the concept of urban medicine, he states explicitly that, ‘Social medicine developed in France in conjunction with the expansion of urban structures.’⁵⁷ In this version of Foucault’s account, there is no doubt that public health and concern for the discipline and security associated with biopower are linked directly with the city. To illustrate the attention and intervention that was deployed in France at the end of the eighteenth century, he uses the same example he will use a year later in *Discipline and Punish*: the image of the plague town and the administrative plan used to govern epidemic disease.⁵⁸ In the lecture, he refers to this as ‘the politico-medical ideal of a good sanitary organization of eighteenth-century cities.’⁵⁹

In *Discipline and Punish*, the connection to the city is downplayed in favour of a more general principle of governance. For instance, in ‘The Birth of Social Medicine’, Foucault observes that, ‘Public hygiene was a refined variation of the quarantine, the beginnings of the great urban medicine that appeared in the second half of the eighteenth century...’ whereas in *Discipline and Punish*, this is substituted with a memorable but more abstract aphorism, suggesting that, ‘in order to see perfect disciplines functioning, rulers dreamt of the state of plague.’⁶⁰ In the section on urban medicine in France, Foucault identifies categories of analysis that I will link to the history of

⁵⁷ Foucault, ‘The Birth of Social Medicine’, 142.

⁵⁸ *Ibid.*, 145.

⁵⁹ *Ibid.*

⁶⁰ The former is from Foucault, ‘The Birth of Social Medicine’, 146. The latter is from Foucault, *Discipline and Punish*, 199.

British towns, including the concern for refuse, congestion, and disorder, the control of circulation within the urban environment, and the organization of 'distributions and sequences' or the supply of physical infrastructure to the city. It is not clear why Foucault attributes these properties only to the French context. Needless to say, I will argue that these factors were equally important to the British.

For Foucault, labour force medicine, which 'was not the first but the last objective of social medicine,' is characteristic of the English system of public health.⁶¹ 'First the state, then the city, and finally poor people and workers were the object of medicalization.'⁶² Foucault has in mind the English 'poor laws', citing them as the development of policies for the working poor and the destitute, to compensate for the unequal rewards of industrialisation. Also providing a brief description of the emergence of the Health Offices and their emphasis on 'control of the needy population', Foucault suggests that English public health is a kind of culmination in the development of social medicine:

...it enabled the creation of three superimposed and coexisting medical systems: a welfare medicine designed for the poorest people; and administrative medicine responsible for general problems such as vaccination, epidemics, and so on; and a private medicine benefitting those who could afford it.⁶³

This tripartite analysis suggests that English medicine brings together the basic elements of biopower: individual care, public health, and the welfare state. Although it is a useful example of where medicine crosses over with the problems of the city, it does have its historiographical problems. As we will have occasion to elaborate in chapters 3 and 4, many of the policies and interventions of public health and spatial planning in particular, were designed to make the poor laws obsolete – to remove direct subsidy for the poor and to replace it with indirect environmental regulations with the idea of encouraging or enabling the poor to help themselves. Preventing disease was preferred to the provision of food and building municipal sewerage was

⁶¹ Foucault, 'The Birth of Social Medicine', 151.

⁶² *Ibid.*

⁶³ *Ibid.*, 155-156.

preferred to wage subsidy. From this perspective, one could argue that urban medicine was in fact a kind of labour force medicine by other means, a biopolitical social medicine of infrastructure, reflected in the reforms of the latter half of the nineteenth century.

Despite a three-year period in which Foucault continued to develop ideas around biopower without any explicit emphasis on the city, he soon makes a substantive return to the subject in the lectures of 1977-78 entitled, *Security, Territory, Population*. In the lecture from the 11th of January, 1978, Foucault revisits the now familiar governmental epistemes that structure much of his later work: sovereignty, discipline, and security. He frames these problems explicitly in terms of space and turns to an analysis of cities and writing on cities. He uses three consecutive illustrations: the example of Alexander La Maître's *La Métropolitée*, published in Amsterdam in 1682 characterises the mode of sovereignty, the establishment of Richelieu on the model of the Roman camp describes disciplinary power, and Vigny's plan for Nantes in the eighteenth century characterises the mode of security.⁶⁴ Through these historico-spatial moments in the history of governance, Foucault shows how the city itself stages the concerns of different forms of power.

More than just the reaffirmation of previous observations regarding the importance of towns for the control, discipline, or regulation of the population, what is significant is his deployment of an unmistakably biological concept: the environment (or, *milieu*). In his consideration of Nantes as the city of security, the notion of 'circulation' is a feature of its planning that sets it apart from an episteme of discipline or sovereignty.⁶⁵ Circulation in the city is the concern for both the movement of goods in terms of economic circulation and the circulation of the atmosphere in terms of public hygiene. This concern for circulation extends to a concern for movement and growth in the city, and as Foucault notes, it has an important temporal dimension:

⁶⁴ Foucault, *Security, Territory, Population*, 12-20.

⁶⁵ *Ibid.*, 18.

Finally, the fourth important point, is that one works on the future, that is to say, the town will not be conceived or planned according to a static perception that would ensure the perfection of the function there and then, but will open onto a future that is not exactly controllable, not precisely measured or measurable, and a good town plan takes into account precisely what might happen.’⁶⁶

The open-endedness of security, its constant vigilance over the city and its monitoring of the growth of towns – the way it ‘works on the future’ as Foucault says, is integral to its permanence within this liberal mode of governance. The antagonistic relation between the distribution of the population and the space of the city is one that never finds a resolution but is rather always projected into the future.

The biological, developmental quality of the notion of working on the future is reinforced when he reflects on the concept of the *milieu* as a way to deepen the spatial theorisation of circulation in planning. His exposition of the term is derived from Canguilhem’s 1947 lecture ‘The Living and its Milieu’, where Canguilhem gives an epistemological commentary on the migration of the idea through Newtonian physics and Diderot’s mechanics into the biology of Buffon and Lamarck. First defining the term biologically, Foucault writes:

What is the milieu? It is what is needed to account for action at a distance of one body on another. It is therefore the medium of an action and the element in which it circulates. It is therefore the problem of circulation and causality that is at stake in this notion of milieu.⁶⁷

Foucault then connects the biological definition directly to the concern of planners:

So, I think the architects, the town planners, the first town planners of the eighteenth century, did not actually employ the notion of milieu, since, as far as I have been able to see, it is never employed to designate towns or planned spaces. On the other hand, if the notion does not exist, I would say that the technical schema of this notion of milieu, the kind of – how to put it? – pragmatic structure which marks it out in advance is present in the way in which the town planners try to reflect and modify urban space.⁶⁸

⁶⁶ Foucault, *Security, Territory, Population*, 20.

⁶⁷ *Ibid.*, 20-21.

⁶⁸ *Ibid.*, 21.

Foucault's acknowledgement of a move from the biological environment to the regulation of urban space encapsulates the sense in which planning, in a biopolitical sense, takes the life sciences as a positive framework. The notion of the environment, where the figure-ground of the population and the city, linked to the idea of a future indeterminacy and state of constant regulation, is not the work of literary metaphor but the very spatial construct upon which planning bases its claims to an operational legitimacy. And like the binary notions of anatomopolitics and biopolitics, the notion of the milieu has its counterpart in the nineteenth century idea of the body. As Francois Jacob describes the transition from a Cartesian to a physiological notion of the body, the similarity to Foucault's account of the milieu is unmistakable:

A living body was not merely an association of elements, a juxtaposition of working organs. It was a unified set of functions, each of which corresponded to precise requirements. Not only did the organs depend on one another, but their presence and arrangement were the result of necessities imposed by the laws of nature governing matter and its transformations. What gave living beings their intrinsic properties was the interplay of relationships secretly uniting the parts so that the whole should function. It was the organization hidden behind the visible structure. Thereby the idea became possible of a nexus of qualities peculiar to living beings: what the nineteenth century was to call 'life'.⁶⁹

The living body and its relation to the 'environment' are fundamental to the city governed by biopower. Servicing this environment, securing it, and cultivating its proper functionality is the preoccupation of governance. The future growth of this environment and the study of its evolution is the developmentality of planning.

Foucault underlines this reading in later lectures, reiterating the constitutive relationship between the environmental mechanisms of security and the 'problems of the town', both in terms of the macro-politics of governing food scarcity and epidemics on the one hand, and the everyday policing of cities on the other.⁷⁰ Both are concerned with the movement of people through space and the transactions of the population with their

⁶⁹ Francois Jacob, *The Logic of Life A History of Heredity and the Possible and the Actual* (London: Penguin, 1989) 43-44.

⁷⁰ Foucault, *Security, Territory, Population*, 63-64.

environment. As he observes in the lecture of the 5th of April, the objects of the policeman's gaze are essentially 'urban objects': 'Let's say that all of these are therefore problems of the town. More generally they are problems of coexistence, and of dense coexistence.'⁷¹

III. Spatialisation of the Milieu

The notion of milieu already suggests that biopower – and Foucault's conception of 'power' in general – has a distinctly spatial dimension that is both conceptual and methodological. It exists simultaneously in many registers and in many theoretical and material instantiations. He defines it in *The Will to Knowledge* as a kind of 'multiplicity of force relations' within a certain domain.⁷² This is not surprising considering the number of potential factors at play within the schema: government regulations, the daily practice of officers and doctors, patients and subjects; statistical data, the institutions of the hospital, the school, the prison, the street; from technical literature to philosophy, journalism and opinion – a mesh of intersectional points that contribute to the overall effect, or indeed *affect* and agency of biopower. The milieu of biopower emerges as much from written and oral discourse as it does fundamentally from an encounter with the built environment and with the examination and calculation of the spaces of population. Taking a somewhat linguistic approach, Paul Hirst has written about Foucault's importance for architectural analysis as being constituted in his expansion of the notion of the discursive 'statement':

Where [Foucault] differs most is in the way that he links discourse to what must otherwise be regarded as the 'extra-discursive', the domain of the object. [...] When things stop being words, then conventionally they stop being treated as statements and become objects rather than a part of discourse. Foucault, on the contrary, links in his concept of statement investigative practices or transformational activities and their constructed objects.

In this we can see his importance for the analysis of architecture. Because, following Foucault, we can treat the statement as something that is not merely written down in words but which nevertheless can be

⁷¹ Foucault, *Security, Territory, Population*, 335.

⁷² Foucault, *The Will to Knowledge*, 92.

part of a discourse. We can consider constructed objects as components of a discursive formation, and relate the practices of the construction, inclusion, and exclusion of objects to the rules and patterns of such formations. In this way we can bridge the gap between theory in architecture and spatial constructs, not merely by treating constructs as examples of a theory, but examining how discourses enter into construction and how in consequence buildings or planned environments become *statements*.⁷³

This expanded notion of the statement can be, as Hirst highlights, spatial and architectural through the way that ‘discourses enter into construction’ both abstractly and materially.⁷⁴ By taking up a spatial notion of the distribution of discourse and an asymmetrical, expanded notion of what might constitute a node within this distribution of power, we can begin to foreground the material elements of power in a manner which is particularly suited to the study of the city. Through this account, I am not especially concerned with convincing anyone of a kind of belated ‘spatial turn’ in planning, as much as I am intent on setting the particular terms of my engagement with planning history – terms that are spatial because of the very nature of planning interventions.

Spaces and Classes

Consider Foucault’s notion of ‘spatialisation’, as he establishes it in the first chapter of *The Birth of the Clinic*. He initially introduces the notion to organise his description of ‘the space of origin and of distribution of disease’ in eighteenth century French medicine. For Foucault, these are ‘sites’ in a very important sense, where knowledge, circulating through these sites, make possible the discipline and authority of medicine. Calling this the ‘medicine of spaces’ he suggests that, ‘Medicine made its appearance as a clinical science in conditions which define, together with its historical possibility, the domain of its experience and the structure of its rationality.’⁷⁵ It is this domain and structure that spatialisation helps us to identify and describe.

⁷³ Paul Hirst, *Space and Power* (London: Polity Press, 2005) 157-158.

⁷⁴ Hirst’s former student, Eyal Weizman, calls this ‘political plastic’ [Eyal Weizman, *Hollow Land: Israel’s Architecture of Occupation* (London: Verso, 2007) 5.]

⁷⁵ Foucault, *The Birth of the Clinic*, xvii.

The primary level at which clinical knowledge operates is within a nosology – the nomenclature and classification of diseases as an abstract series. Within this spatialisation, or ‘primary configuration of disease’, he describes the nosology as a body of knowledge – an archive of facts and descriptive traits that order diseases hierarchically and in series, or as he says, create a ‘table and picture’ of a disease. These facts must emerge as the aggregate of empirical, rather than theoretical factors: ‘The historical embraces whatever *de facto* or *de jure*, sooner or later, directly or indirectly, may be offered to the gaze.’⁷⁶ Importantly, he then defines the first spatialisation as ‘a space in which analogies define essences.’⁷⁷ So, although the nosology is inherently an intellectual construction by the physician derived from observations in order to aggregate symptoms into identifiable diseases, the system is nonetheless regarded as a reflection of an ontologically natural order of disease.

Already, by following Foucault’s commentary on eighteenth century medicine and his analysis of its internal logic, one can see how the spatialisation of knowledge shadows that of biopower itself. The same ‘nosological’ approach of empirical observation, classification, and naturalisation of the conditions of disease not only shapes the study of epidemiology in the nineteenth century city, it is also the methodology through which social, architectural, and spatial categories, and ultimately political questions are approached by an increasingly scientifically-minded group of government officials, reformers, and writers. Just as in clinical medicine, biopower wants to identify, classify, and divide, and it first sees society within the spatialisation of a nosology.

The second spatialisation of disease is the ‘concrete space of perception’, in which the doctor is confronted with the body of the patient in the clinic. It is in this interaction that the classificatory system is both measured against and realised in the individual body. This is the localisation of disease in the biological subject (its *embodiment*). The encounter between

⁷⁶ Foucault, *The Birth of the Clinic*, 4.

⁷⁷ *Ibid.*, 5.

the classificatory system and its empirical apprehension is a constant re-statement of the category, or as Foucault puts it: ‘The patient is the rediscovered portrait of the disease’.⁷⁸ Despite their distinct qualities, there is a constant circulation of knowledge between the primary and secondary spatialisations. Clinical medicine segments the experience of the patient at the same time that it recalibrates that very system of segmentation. This space of encounter and its transactions with the system of classification is characteristic of the work of all institutions of discipline where empirical analysis forms the rationale for authority: the prison guard, the factory foreman, the school teacher, and the panoply of inspectors, police officers, and medical officers of the city. Such transactions form the very archive of modern management and it is from this fund that biopolitical strategy is formulated and deployed.

The tertiary or third spatialisation: the ‘locus of various dialectics’. For Foucault this is the space where the politics, the law, the social space of the disease is distributed. Foucault’s example of a way in which notions of disease are conditioned by tertiary spatialisation is the ostensible fact that ‘The natural locus of disease is the natural locus of life – the family[...].’⁷⁹ The experience of disease in eighteenth century is conditioned by its treatment in the family home and its relation to the emergence of the clinic as a separate and privileged site of authority. The very idea of disease in this context is inextricably linked to cultural values of familial duty of care.

Of course, Foucault examines the ‘naturalness’ of this configuration *from the outside*, as a property of the historical discourse rather than of immanent truth. And it is precisely in this spatialisation that the contingency of disease nomenclature and classification becomes clear. The identification of this spatialisation of disease is a distinct and destabilising argument that Foucault makes regarding knowledge in general: cultural values such as the role of traditional family life or institutional and political formations

⁷⁸ Foucault, *The Birth of the Clinic*, 16.

⁷⁹ *Ibid.*, 19.

condition the apparent objectivity of scientific perception and even the mode of medical treatment.

Foucault's third spatialisation is in many ways the decisive category for his concept of knowledge. It is certainly an overriding theme of *The Birth of the Clinic*. It is where political power is most forcefully experienced as science circulates between the empirical and the socially conditioned. This category again shows the influence of George Canguilhem, whom Foucault acknowledges as one of the key thinkers of the epistemology of medicine. Writing on Canguilhem, Foucault observes that he focuses on biology and medicine precisely because of these entanglements: they exist in the 'middle regions where knowledge is much less deductive, much more dependent on external processes (economic stimulations or institutional supports) and where it has remained tied much longer to the marvels of the imagination.'⁸⁰ Or, as theorist Nikolas Rose suggests in his reflection on Canguilhem:

It is not so much a question of what a word or even a concept 'means' – life, organism, gene, cell, reflex, reaction, 'persistent vegetative state' – but of the way it functions in connection with other things, what it makes possible, the surfaces, networks and circuits around which it flows, the affects and passions that it mobilizes and through which it mobilizes.⁸¹

It is this third spatialisation of disease where Foucault trains his focus on these 'affects and passions', where science is confronted with the messiness of its circulation in culture. Inevitably, these factors both feed off of – and into – the way that science and medicine calibrate their activities. Foucault's spatialisations allow us to see the communication of knowledge between these staging grounds and their interpenetration, rather than a clearly demarcated area of truth and fact, right and wrong. Spatialisation sets the conditions for an analysis of lines and directions of force and insists that all spatialisations are spaces of power.

⁸⁰ Michel Foucault, 'Introduction by Michel Foucault', in George Canguilhem, *The Normal and the Pathological*, trans. Carolyn R. Fawcett, Robert S. Cohen (New York: Zone Books, 1991) 13.

⁸¹ Nikolas Rose, 'Life, Reason And History: Reading Georges Canguilhem Today', *Economy and Society*, Vol. 27, Issue 2-3 (1998): 167.

The Space of Population

At the end of the chapter on 'Spaces and Classes', Foucault complicates one aspect of spatialisation, ending with the comment that this schema of the medicine of spaces, which he has spent most of the chapter establishing, completely changes in the nineteenth century. In the subsequent chapter, 'A Political Consciousness', Foucault establishes the character of this radical shift by appealing to a subject that (as we have seen) structures a number of his later concerns regarding biopower: that of the management of epidemics. In looking at the shift signalled by the medicine of epidemics, it becomes clear that the 'political consciousness' that Foucault examines in this chapter is essentially the 'urban medicine' he describes in the Rio lectures of 1974, and what he will formalise as biopower in *Discipline and Punish*.

Just as he will theorise the conceptual shifts between anatomopolitics and biopolitics in *The Will to Knowledge* as one between the discipline of the individual and the security of the population, the medicine of epidemics is portrayed not simply as an extension of the individualised medicine of spaces, but rather as a distinct extrapolation of its knowledge, the dispersion and swarming of its organisation to that of the social body, what Gilles Deleuze described as the 'folding back' of knowledge in the nineteenth century.⁸²

Significantly, the epistemic originality of the space of 'population', which Foucault emphasizes wherever he can, is based on its spatial deployment. Thomas Osborne offers a concise description of this shift in a chapter on Foucault and medical governmentality:

Here it was not a question of the government of individual conduct through fixed regiments and rules, and certainly not of an ascetic imperative, but rather of the provision of an infrastructure that would provide the individual and the collectivity with security in the face of threats to vitality. The eighteenth century met the sickness of collective space with ventilators and procedures of discipline; the nineteenth century posed the problem in terms of water and the proper

⁸² Gilles Deleuze, *Foucault*, Translated and edited by Seán Hand (London: Continuum, 2006) 128. In the section titled 'II The Historical Formation of the Nineteenth Century'.

government of towns and cities.⁸³

Reading Osborne alongside this chapter in *The Birth of the Clinic*, the shift from the discipline of the individualised doctor-patient relationship to the indirect methods of public health and town planning makes clear the way that power moves from the enclosed spaces of the individual body to the collective spaces of the social body as a matter of political strategy. But what is not sufficiently articulated in Foucault's account is how precisely the notion of the spatialisation of the medical body is then mapped onto the political space of the social body.⁸⁴

The principle of spatialisation allows us to parse a heterogeneous set of relations while at the same time emphasising their co-constitutivity with the spaces of architecture, the city, the body, and the conceptual spaces of

⁸³ Thomas Osborne, 'Drains, Liberalism and Power in the Nineteenth Century', in *Foucault and Political Reason: Liberalism, neo-liberalism, and rationalities of government*, eds. Andrew Barry, Thomas Osborne, Nikolas Rose (Chicago: University of Chicago Press, 1996) 110.

⁸⁴ Thomas Osborne and Nikolas Rose have suggested such a spatialisation in their essay on 'Spatial Phenomenotechnics', where they outline the tripartite of Modelling, Realisation, and Demarcation as a 'phenomenotechnical' generalisation of Foucault's primary, secondary, and tertiary spaces. Henri Lefebvre has employed a strikingly similar schema of Absolute, Abstract, and Differential space in *The Production of Space*, while David Harvey modifies this as Absolute, Relative, and Relational space in his lecture *Space as a Keyword*, and critical geographer Margo Huxley has theorised Dispositional, Generative, and Vitalist spaces of governmentality in her essay 'Spatial Rationalities'. The list could go on – Deleuze and Guattari's *mille plateaux* are perhaps the inevitable destination of this line of reasoning – but none of the specific spatial mappings are *essential* to a reading of the interactions between power, knowledge, and space. Rather they all point towards the perpetually contingent and recombinant possibility of locating constellations of spatial force relations that are irreducible to a singular origin. They articulate intersections, moments of conflict or synergy. [Thomas Osborne and Nikolas Rose, 'Spatial Phenomenotechnics: Making Space with Charles Booth and Patrick Geddes', *Environment and Planning D: Society and Space*, Vol. 22, issue 2(2003): 213-214; Henri Lefebvre, *The Production of Space*. Translated by Donald Nicholson-Smith (Malden: Blackwell Publishers Ltd) 1991; David Harvey, 'Space as a Keyword', Paper for *Marx and Philosophy Conference*, Institute of Education, London, 29 May 2004; Margo Huxley, 'Spatial rationalities: order, environment, evolution and government' *Social & Cultural Geography*, Vol. 7, No. 5, October 2006, 771-787; Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, Translation by Brian Massumi (London: Continuum) 1980.]

knowledge and the social. However, it also seems to articulate a perennial conceptual instability of the body as a figure of discourse in both modern medicine and planning. As Hirst noted, this way of working allows us to identify and make use of many more objects as possible statements in the discursive framework, but it also has a destabilising effect on the status of subjects and objects within this new topology: the body and the city (or figure and ground, if you will) are treated as equally expressive and meaningful statements, resulting in a kind of conceptual indeterminacy and slippage between notions of subjectivity – even from the ostensibly precise perspective of the medical profession. With the nomination of a series of asymmetrical and overlapping geographical factors we are confronted with a disaggregation of the body *into* a milieu of objects and functions: an environmentalisation of bodies as much as an embodiment of the environment. The city appears less as a bounded symbolic entity and more as a spatial terrain of interactions between mechanisms and organisms, forces and vitalisms. This blurring of the boundaries of physiology and a kind of social physics of the environment only increase over the course of planning discourse, to the point where a clear dichotomy between organism and mechanism becomes redundant in the theorisations of early twentieth century planners such as Patrick Geddes or Patrick Abercrombie.

As a consequence, metaphor is not a very useful concept within this logic of developmentality. It is precisely within this indeterminate milieu of material and vital concepts that planning is able to establish and invigorate a biological understanding of the city – a city that will metabolise, develop, breathe, and circulate without irony or analogy. When planners speak of the material of the built environment as having evolutionary or developmental properties, they are providing what is, within their field, a direct description. But my task in the thesis is to disentangle these discursive strategies, to show their origins in the spatialisations of physiology, statistics, epidemiology, ecology, and architecture, and to point towards the political stakes in this circulation of ‘the human species’ within the habitat of the city.

IV. Biopower and the City, After Foucault

As Stuart Elden has observed, Foucault's later work can be bracketed essentially by two themes: 'strategy and war' on the one hand, and 'medicine and habitat' on the other.⁸⁵ In the abstract, one might also use this schema to classify the trajectory of interpretations, responses, and elaborations on the theme of biopower subsequent to Foucault's death.

Of the two, the trajectory of 'medicine and habitat' has been the more productive in the study of planning. The interpretations of Dorothy and Roy Porter, Ian Hacking, Paul Rabinow, Thomas Osborne and Nikolas Rose in the history and theory of medicine and biology are testament to the critical, theoretical, and rhetorical influence of Foucault's analysis. This on-going medical discourse has synthesised the arguments of early texts such as *The Birth of the Clinic* and cross-pollinated them with the late Foucault, mining the concepts of governmentality and biopower for investigations of the hospital and the lab, statistical method, genetic engineering, public health and epidemiology. Although that process of cross-pollination is perhaps a description of what I myself have done in this chapter, I would argue that the outcomes have some important differences. Whereas the 'medicine and habitat' debate of the 1980s and 90s had considerable consequences for our understanding of the history and politics of the hospital, the medical profession, and the epistemology of health...the histories and theories of the city, planning, and architecture have been less sure of their centrality to the discourse. Health has certainly been located in the city by these scholars, but what I intend to do is to locate the city – and the production of the urban – precisely within the terms of health, medicine, the body, the environment, and evolution as political and formal terms.

In Elden's grouping of 'medicine and habitat', I will also provide a particular emphasis on the latter concept of *habitat* and the manner in which biopower has produced a way of knowing and defining the spaces and

⁸⁵ Stuart Elden, 'Strategy, Medicine and Habitat: Foucault in 1976', in Jeremy W. Crampton and Stuart Elden, eds. *Space, Knowledge and Power: Foucault and Geography* (Farnham: Ashgate, 2010) 70.

spatialisations of the city, its status as a biological environment, and the consequences this has had for the agency of planning. Paul Rabinow suggests some useful terminology in *French Modern: The Norms and Forms of the Social Environment* (1989), where the ‘norms and forms’ of modernity are the accretion of a whole network of administrative, colonial, and intellectual efforts to develop the modern French state.⁸⁶ Although I do not intend to construct here a kind of ‘British Modern’, certain of Rabinow’s observations have resonated with my analysis of the British context. His engagement with the intersections of architectural and engineering discourse and the public health controls around cholera management, as well as the transactions of governmentality between colonial states and domestic urban planning are both recurrent themes in this thesis. But where Rabinow’s object is a comprehensive anthropological account of statecraft, ours is the much more specific account of the management of the city.

Thomas Osborne and Nikolas Rose’s work is notable in this regard, as they have jointly formulated potential starting points for a spatial-epistemological inquiry into the history of the British city. In essays such as ‘Governing Cities: Notes on the Spatialisation of Virtue’ (1999) we see a ‘speculative’ attempt to use the schema of spatialisation to articulate the governmentality of the city at specific historical registers. Although they explicitly reject the idea of a ‘Foucauldian urban sociology’ they productively employ notions of spatialisation and milieu in their account of the nineteenth century city. Spatialisation is employed again when they take up planning and reform in earnest in the essay ‘Spatial Phenomenotechnics: Making Space with Charles Booth and Patrick Geddes’ (2004), which makes important connections between the cartographic representations of sociological categories and the projective nature of planning and the notion of survey that both figures share.⁸⁷

⁸⁶ Paul Rabinow, *French Modern: Norms and Forms of the Social Environment* (London: The MIT Press) 1989.

⁸⁷ See: Osborne and Rose, ‘Spatial Phenomenotechnics’, and ‘Governing Cities: Notes On The Spatialisation Of Virtue’, *Environment and Planning D: Society and Space*, Volume 17, issue 6(1999): 737-760.

However, because the object of their investigations revolves around the fate of the concept of governmentality, the figure of the city in these essays plays more of a supporting role. There is a sense in which the status of the city is taken as a stable category, on the surface of which concepts can circulate and be superimposed. They suggest as much when they write that, ‘in what follows, our concern is not with the history, the sociology, or even the idea of the city, but with the city as a way of diagramming human existence, human conduct, human subjectivity, human life itself – diagramming it in the name of government.’⁸⁸ In the present work, I will admittedly use a similar general strategy, but in my analysis, the city is more than the substrate or surface of intelligibility, it is the active environmental material through which governmentality and indeed ‘developmentality’ operate. In the following chapter, I will show how the emergence of public health actually creates the conditions for a constitutive relationship between the governance of the city, its built forms, and the re-shaping of its territories. By identifying planning as the agent of my study and making the city a central figure in the emergence of biopower, I am also creating the space to examine the consequences of this distinct emphasis, one that departs from the particular concerns of medical sociology, towards an epistemology of urban development.

⁸⁸ Osborne and Rose, ‘Governing Cities’, 737.

3. THE HEALTH OF TOWNS

I. Introduction

The previous chapter established the discursive and conceptual territory of the thesis in terms of Foucault's notion of biopower and spatialisation. In this chapter we move to a direct engagement with the city of the nineteenth century, examining the formation of some of the key categories underpinning planning discourse: growth, population, the logic of statistics, and the space of the city. By my marking of the beginning of planning discourse with the public health crisis of the early nineteenth century, in many ways I follow medical sociology and the history of science, but as I pointed out in chapter 2, our paths diverge as the city itself takes shape as the object under investigation. The turn towards the city is not a turn away from the formation of scientific discourse, for we see the fields of statistics, epidemiology, and physiology are central to the crisis of the city. This chapter takes the spatialisation of these discourses and the imbrication of the body with the city as the fundamental basis for the planning discourse in the latter part of the century – a discourse on the city as a milieu for living – and a living milieu.

Foucault makes it clear that techniques of biopower in the early nineteenth century were no longer limited to a state of emergency but had become the general form of governance of the city in perpetual crisis. The spectacle of growth and the attendant problems of 'population' that had once been on the periphery since the 17th century, now moved towards the centre of concern. In tracing the emergence of biopower in the city, I will be interested in drawing out the spatial and architectural implications. The developmentality of planning does not emerge as a way of *solving* problems of the city, but rather as a way of identifying problems that will be the permanent work of governing – problems that will re-map and re-shape the city in the image of an organic system.

The first part of the chapter has a dual purpose: to show how the city becomes a specific object of concern in the development of nineteenth century reform through the problem of population growth, and then, how this figure of the population is linked to the city as a category of biopower. This will be demonstrated through the emergence of modern statistics and the role it plays in making the social visible. Further to this, I will show how the idea of the social body, linked to a nineteenth century idea of physiology, provides a basis for diagnosis of the city within the terms of the ‘normal’ and the ‘pathological’. In the second part of the chapter, I turn more specifically to the spatialisation of disease, looking at how empirical evidence and disease theory combine to create a concept of space in the city that is defined by its interpretation through pathogenesis and the city as a disease vector. In conclusion, I show how this new framework, in which the city in crisis is structured by a new set of metrics and a new logic of spatial organisation, forms the conceptual groundwork for a doctrine of developmentality.

II. Cities and Growth

It is a truism that more than half the world’s population lives in cities. This demographic novelty has served to license all manner of speculation on the future of the city and its implications for the architectural, political, and ecological fate of human society. However, this apparently sudden emergence of the city and its population in the 21st century is misleading. For at least since the turn of the nineteenth century, the *growth* of cities, as opposed to their fortification or their symbolic order has been their defining characteristic in terms of both design and governance. One need only compare descriptions of Christopher Wren’s plan for the rebuilding of London in the 17th century – which emphasised the importance of beauty, convenience, ‘pomp and regularity’ – to nearly every tract of the Garden City and Town Planning Association 130 years later, which invariably describe town planning as a solution to the hazards of overpopulation.⁸⁹ In the 17th

⁸⁹ Stephen Wren Esq., *Parentalia, or Memoirs of the Family of the Wrens* (London: T. Osborne, 1750) 267. Also p 270, quoting from James Ralph, A

century, the size of the population and the form of the city were separate questions. By the end of the nineteenth century, the form of the city and the population are a single question: how to manage growth by means of design. Classical orders and perspectival symbolism fall away in the biopolitical spectacle of growth characteristic of the modern city. As I have already suggested, this preoccupation with growth is reflected in standard histories of modern British urbanisation and planning, which invariably begin their description of the nineteenth century with qualitative and quantitative accounts of towns and their astonishing accumulations and expansions.⁹⁰ The event of growth in the nineteenth century is used to frame analysis of urban form across disciplines and methodologies. Regardless of the particular theoretical or empirical object of analysis, the modern city demands to be considered in its growth.⁹¹

The Problem, not the Fact of Growth

The obligatory commentary on growth is not merely a prefatory observation; it is the identification of the fundamental problem addressed by planning. The growth of the city and the population moves to the fore in the nineteenth century precisely because it is an urgent political problem. There are no social or political texts on cities in the nineteenth century offering untroubled endorsements of the growth of population or the growth of towns. Rather, growth is the metonym for an entire apparatus of problems related to the city and the population, especially the matrix of deprivation

critical review of the publick buildings, statues and ornaments in and about London and Westminster; to which is prefix'd the dimensions of St. Peter's Church at Rome and St. Paul's Cathedral at London (London: J. Wilford and J. Clarke, 1734) 2.

⁹⁰ A brief cross-section of texts, all of which are more than thirty years old but still make it on to the standard history and theory syllabi, might include William Ashworth's *The Genesis of Modern British Town Planning* (London: Routledge & Kegan Paul, 1954), which opens with 'The Growth of the Urban Population'; Benevolo's socialist and architectural interpretation, *The Origins of Modern Town Planning* (1971), beginning with the chapter 'The Growth of the Industrial Town'; Cherry's *The Evolution of British Town Planning* (1974), which describes 'The Spectre of Urban Growth'; and Hall's textbook *Urban and Regional Planning* (1975), which simply states, 'The Origins: urban growth from 1800 to 1940'. Notice also the consistent use of naturalistic terms such as 'origins', 'genesis', and 'evolution'.

⁹¹ Or the more recent and rather novel inverse, 'shrinking cities'.

created by overcrowding, poverty, and disease. In other words, the discourse on growth is an introduction to the crisis of the city. More importantly, planning histories begin with the phenomena of growth because it is from within this crisis that a new understanding of the relationship between the city and the population takes shape, and within which a new role for government intervention is forged.⁹² The form of that intervention is fundamentally dependent on the biopolitical concepts and terminology that are developed to describe problems of growth.

A comparison of Wren's aesthetic values with the social programme of the Garden City gives us some idea of how this epistemic shift in the discourse appears as a question within urban design. But this shift also turns on a conception of the idea of 'population' that developed over the course of the nineteenth century. The basis of this can be seen in the work of two central figures of social thought, Jeremy Bentham and Thomas Malthus. Bentham and Malthus offer us two distinct but constitutively linked positions on the problem of population, framing it, as Foucault might say, as a question that is both anatomopolitical and biopolitical.

On the one hand we have Bentham, who identified the problem of the population as one of discipline. His concern was to organise the productivity of the individual in terms of the utilitarian principle of the greater good for the greater number of people. Bentham thought of the problem of population as primarily one of individualised disciplinary technique, which required the application of proper reasoning, and indeed, proper technology to achieve docile and productive subjects. Bentham's conceptual development of the 'panopticon' is an exemplary utilitarian model of the approach to the problem of discipline through a unifying architectural idea. Formally, the panopticon would be a circular or polygonal building with a central point of command, allowing all subjects to see the centre – occupied by an officer, teacher, or

⁹² Although this does not seem to be widely discussed in planning theory, Murray Stewart gets close to acknowledging the issue in the introduction to *The City: Problems in Urban Planning* (Harmondsworth: Penguin, 1972) when he makes the point that town planning has been characterised, historically and presently, by its dissatisfaction with the city and forms of urban development (p 11).

foreman – and in turn be seen by them at all times. Through the force of inspection and the ambient power of the gaze, all manner of disciplines could function via the proxy of architecture. Unlike modern forms of architecture that refer to a notion of ‘typology’ to give specificity to the building, the panopticon was designed as a general principle – a *topological* relation rather than *typological* definition – that could be reproduced at many scales and for many purposes.

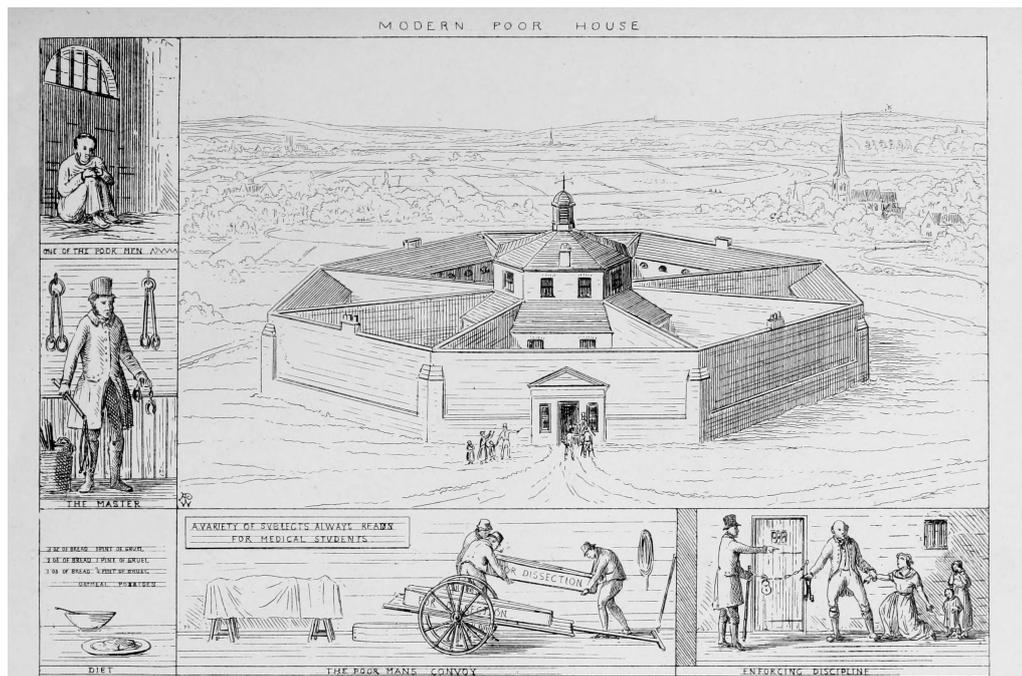


Fig. 2: Extract from Pugin’s *Contrasts* (1836), showing a ‘modern poor house’ in the panopticon style. Also notice in the side panels, an emphasis on diet, discipline, and the body.

The occupants of the panopticon needn’t be criminals. Any subject requiring instruction, correction, or discipline might benefit from a panoptic spatial routine. In an essay from 1796, Bentham proposes to house the paupers of England in 250 panopticon workhouses of his design, operated through a national charity company. Bentham groups together the sick, the mentally ill, and the unemployed under the ‘Table of Cases Calling for Relief’ in which ‘the demand for relief is constituted by INDIGENCE: -which may be the result of Personal or Internal Causes,’ or, alternatively, ‘External Causes’. The paupers of England would be classified by their hands: ‘The word Hands is chosen, as bearing reference to Employment, serving thereby to point the attention to the consideration of the Employments, to which the persons thus

characterized may respectively be competent or incompetent.’ ‘Incompetent hands’ destined for the work-house included insane hands, unripe hands, sick hands, child-burthen'd hands, unavowed employment hands, lazy hands, out of place hands, casual-stagnation hands, superseded hands, stigmatised hands, suspected hands, unchaste hands, strange hands, confined hands, past-prosperity hands, and decayed gentility hands, amongst others.⁹³ One can infer an almost endless refinement of this series, by which individual ailments and obstacles to productivity could be apprehended and accounted for in the management of the workhouse. The subjects committed to the workhouse had as their primary problem individual failure, be it natural or acquired. Bentham’s system promised a firm and precise technology of observation and correction, offering a purportedly efficient disciplinary solution to the problem of population.

Just three years later, when Thomas Malthus published the first draft of *An Essay on the Principle of Population*, Bentham’s problem took on a new dimension. No longer is the problem of population focused on the anatomopolitical discipline of the hands and the catalogue of their individual defects. Instead, Malthus is preoccupied with the problem posed by the size of the population itself.⁹⁴ Contrary to the mercantilist consensus that a large population was the key to a healthy economy and a strong state, and explicitly in opposition to William Godwin and the Marquis de Condorcet’s social doctrines of human perfection, Malthus shows in the *Essay* how natural and material concerns – of the body in relation to territory, reproduction, and food consumption – far outweigh the intellectual and economic aspirations of society. As the argument goes, food production only increases arithmetically but population increases geometrically, thus leading to inevitable ‘misery and vice’ if left unchecked.⁹⁵ According to Malthus there are two kinds of checks

⁹³ From a fold-out table at the end of *Situation and Relief of the Poor*, 1797, by Jeremy Bentham, Esq. roughly page 36, if you count the table before it as page 35, after the last page of the essay, 34.

⁹⁴ Thomas Malthus, *An Essay on the Principle of Population* (Oxford: Oxford University Press) 2008. Originally published in 1798, and subsequently with Malthus’s revisions in 1803, 1806, 1807, 1817, and 1826.

⁹⁵ Armand Mattelart identifies Malthus as a harbinger of biopolitics in *The Invention of Communication* (Minneapolis and London: University of

on population: positive checks such as famine, war, and disease, where the death rate is increased, usually by forces beyond the scope of individual action, and there are preventive checks, which lower the birth rate, of which Malthus mentions delayed marriage, prostitution, celibacy and birth control. In Malthus we see a shift in the conceptualisation of the figure of the population itself. Rather than a general virtue for the state or a class to be instructed, it becomes a problem with volatile immanent properties; a concept that replaces the notion of perfection with one of limits requiring regulation. Malthus implicitly poses the problem as one of space, where the limited area for human habitation and food cultivation comes up against the hypothetically unlimited reproductive potential of the population.

We should note here that the word ‘proletariat’, a term that neither Bentham nor Malthus employed, still gives some insight into the conceptual shift which took place. Aside from Marx’s later economic employment of the term, it also comes from the Latin *proletarius*: ‘The lowest class of Roman citizens, owning little or no property and with restricted rights, and regarded as contributing nothing to the State except children’.⁹⁶ For mercantilist and perfectionist thinkers, and even for Bentham, this class of citizens needed only to be appropriately catalysed to become a positive and productive force. But Malthus reverses this, showing that enlightened thinkers should be suspicious of this proletariat and their constant production of offspring. It must be regulated at the level of biopower or civilisation will collapse. That the problem of population in Malthus’ *Essay* is essentially the problem of poverty is echoed in Bentham’s attention to the paupers in England. The problem is posed not only as one of population in general, but a certain kind or class of population that is seen as inherently problematic. Or as Giorgio Agamben points out: ‘Every interpretation of the political meaning of the term “people” must begin with the singular fact that in modern European languages, “people” also always indicates the poor, the disinherited, and the

Minnesota Press, 1996) 65. For Foucault, Bentham seems more important than Malthus.

⁹⁶ "proletariat, n.". OED Online. March 2016. Oxford University Press. <http://www.oed.com/view/Entry/152329?rskey=oDUoEU&result=1&isAdvanced=false> (accessed May 12, 2016).

excluded.⁹⁷ The early nineteenth century writer William Cobbett captures the derision that the middle classes felt towards the problem of population when he writes in 1817 that, ‘We now frequently hear the working classes called “the *population*”, just as we call the animals upon a farm “the *stock*”.’⁹⁸

Cobbett gives us another insight in later writing into an important conceptual shift that may have already become obvious in the semantics of my own description – that the city begins to become a term constitutively linked to that of the body and the population. In Cobbett’s *Rural Rides* (1830), we see the reflections of a Malthusian anxiety around the growth of population in his anatomical description of the towns of England.⁹⁹ Mainly a book about rural and agricultural politics in the 1820’s, the city is an unwelcome figure in Cobbett’s landscape, an interruption of the pastoral beauty that he seeks to appreciate. His commentary on towns describes them as blemishes on the body and expresses the scepticism and fear harboured by the middle classes in regard to their growth, writing, ‘Have I not, for twenty long years, been regretting the existence of these unnatural embossments; these white swellings, these odious wens, produced by corruption and engendering crime and misery and slavery?’¹⁰⁰ Later, attacking the mercantilist economic assumptions of this bio-economic prosperity, he writes:

And these rows of new houses, added to the Wen, are proofs of growing prosperity, are they? These make part of the increased capital of the country, do they? But how is this Wen to be dispersed? I know not whether it be to be done by knife or by caustic; but dispersed it must be! And this is the only difficulty, which I do not see the *easy* means of getting over.¹⁰¹

⁹⁷ Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Stanford: Stanford University Press, 1998) 176.

⁹⁸ William J. Cobbett, ‘Mr. Cobbett’s Taking Leave of His Countrymen’, in *Selections from Cobbett’s Political Works, Vol. V* (London: Anne Cobbett, 1835), 192.

⁹⁹ William Cobbett, *Rural Rides* (London: William Cobbett) 1830. Subsequent quotations taken from the expanded 2nd edition: William Cobbett, *Rural Rides* (London: Anne Cobbett) 1853.

¹⁰⁰ Cobbett, *Rural Rides*, 42.

¹⁰¹ Cobbett, *Rural Rides* (2nd ed.) 64.

Cobbett does not suggest a solution to the problem he observes, only that there will be one inevitably, and it will be surgical and messy, ‘by knife or by caustic’.¹⁰² In terms of classical political economy, a large population and the increasing scale of the city is the origin of its wealth, and yet, the city’s overwhelming problem by the end of the eighteenth century appeared to be poverty itself, embodied in the problem of the population and signified by the growth of the city. While language struggled to articulate the population as an empirical totality, the city showed the concrete form of the problem. Cobbett’s description conveys both the scepticism with which growth was greeted by observers and the extent to which the problem was framed as a trialectic between the city, the population, and the body. And as the techniques of biopower are increasingly directed towards the growth of the city, a conceptual articulation emerges that is in equal measures physiological and environmental.

But if the concern for growth gives rise to a new organicism in regards to the city, we should not mistake this for a purely symbolic or elemental body common to classical literature and rhetoric. Rather, what becomes apparent in the early nineteenth century is the emergence of a physiological body of parts and systems. Growth in the physiological city is not a monolithic force to be countered, rather it is a metabolism to be measured, and an organic system to be understood. In this sense, the population, like disease, is a concept that must be detected, measured, and controlled. The developmentality of planning is thus predicated on both a Benthamite utilitarian emphasis on forms of discipline combined with a Malthusian concern for growth, codified in forms of governance to regulate the population by way of the city. It is important to note here that the population rarely, if ever speaks for itself in the view of governmental power. Rather, it requires exhaustive explanation and interpretation from above and below.

¹⁰² Cobbett, *Rural Rides* (2nd ed.) 64.

Population Statistics

‘Enumeration demands *kinds* of things or people to count. Counting is hungry for categories.’¹⁰³ – Ian Hacking

The ‘crisis’ of the city in the nineteenth century is characterised by an ‘avalanche of printed numbers’, as Ian Hacking put it.¹⁰⁴ With the introduction of statistical methods to population analysis, we see the emergence of a discourse on the city that is simultaneously meticulous and abstract. I am hardly the first to observe the fundamental importance of the development of statistics for the social sciences, but the constitutive link between the city and the statistical gaze has still been underestimated. Statistics do not merely bring to light the latent social conditions of the city, they are themselves developed in the context of epidemiological crisis that categorically re-territorialises, segments, locates, and defines the city. However, if statistics in its modern form is of central importance to the nineteenth century idea of the city, it is only made possible by the intersection of administrative techniques for counting bodies and buildings that can be traced to the later 16th and 17th centuries. Documentary practices such as the bills of mortality and fire insurance work on the calculation of dense quantities of people, demographically locating individuals in their cities, their parishes, and their homes. Through these practices, we see not only the emergence of ‘population thinking’ as it is recognised by historians of medicine, but also the development of an environmental and architectural description of the condition of the population.¹⁰⁵

The first technique, the bills of mortality, began in England primarily as a practice of the plague administration – that template of the disciplinary society to which Foucault returns so often. As early as 1532, the bills of mortality are established not as a direct numbering of the population but rather as a registry of every burial in every parish of London. Even in the earliest examples, the numbers of dead resulting from the plague are listed

¹⁰³ Ian Hacking, ‘Bio-power and the avalanche of printed numbers’ *Humanities in Society*, Vol. 5, Nos. 3-4 (Summer/Fall, 1982): 280.

¹⁰⁴ *Ibid.*, 279

¹⁰⁵ Alfredo Morabia (ed.), *A History of Epidemiologic Methods and Concepts* (Berlin: Birkhäuser Verlag, 2004) 7.

separately from the total number of burials in order to highlight the specific impact of the disease in a particular year.¹⁰⁶ The bills are soon modified to include the recording of baptisms and an extended number of causes of death. The territories covered by the bills grow by year, but up through the mid-nineteenth century when the bills are replaced with the census and the General Register Office, the expansion of the city consistently outpaces their reach. Although intermittent in the mid 16th century and recorded as weekly reports only during large epidemic outbreaks, the bills become a matter of permanent government interest by the turn of the 17th century.¹⁰⁷ Using the parish as their unit and the city as its boundary, the weekly reports were used by the government and the gentry to monitor the influx and abatement of the plague through the indexical reference of death.

¹⁰⁶ Cornelius Walford, 'Early Bills of Mortality' *Transactions of the Royal Historical Society*, Vol. 7 (1878): 214.

¹⁰⁷ As Foucault points out: 'In other words, the question of the population was not at all grasped in its positivity and generality. The question of knowing what the population is and how one could repopulate arose in relation to dramatic mortality.' [Michel Foucault, *Security, Territory, Population*, 67-68.].

The Diseases and Casualties this Week

| | | | |
|--|--|----------------------------|----------------------|
| A Borrive | 6 | Kingevil | 10 |
| Aged | 54 | Lethargy | 1 |
| Apoplexie | 1 | Murthered at Stepney | 1 |
| Bedridden | 1 | Palie | 2 |
| Cancer | 2 | Plague | 3880 |
| Childbed | 23 | Plurific | 1 |
| Chrifomes | 15 | Quinfie | 6 |
| Collick | 1 | Rickets | 23 |
| Consumption | 174 | Rifing of the Lights | 19 |
| Convulſion | 88 | Rupture | 2 |
| Dropſie | 40 | Sciatica | 1 |
| Drowned 2, one at St. Kath- Tower, and one at Lambeth | 2 | Scowring | 13 |
| Feaver | 353 | Scürvy | 1 |
| Fiftula | 1 | Sore legge | 1 |
| Flox and Small-pox | 10 | Spotted Feaver and Purples | 190 |
| Flux | 2 | Starved at Nurſe | 1 |
| Found dead in the Street at St. Bartholome w the Leſs | 1 | Stilborn | 8 |
| Frighted | 1 | Stone | 2 |
| Gangrene | 1 | Stopping of the ſtomach | 16 |
| Gowt | 1 | Strangury | 1 |
| Grief | 1 | Suddenly | 1 |
| Griping in the Guts | 74 | Surfeit | 87 |
| Jaundies | 3 | Teeth | 113 |
| Impoſthume | 18 | Thruſh | 3 |
| Infants | 21 | Tiffick | 6 |
| Kild by a fall down ſtairs at St. Thomas Apoſtle | 1 | Ulcer | 2 |
| | | Vomiting | 7 |
| | | Winde | 8 |
| | | Wormes | 18 |
| Chriſtned { Males — 83 } { Females — 83 } { In all — 166 } | Buried { Males — 2656 } { Females — 2663 } { In all — 5319 } | Plague — 3880 | |
| Increased in the Burials this Week | | 1289 | |
| Parishes clear of the Plague | | 34 | Parishes Infected 96 |

*The Aſſize of Bread ſes forth by Order of the Lord Mayor and Coms of Aldermen,
A penny Wheaten Loaf to contain Nine Ounces and a half; and three
half-penny White Loaves the like weight.*

Fig. 3: Bill of Mortality from August 15-22, 1665.

From their inception, the bills were seen to be useful primarily for an accurate and timely narration of this destruction, but by the 1660s a new reading of the bills developed that took a different view of their contents. In 1662, with the publication of John Graunt's *Natural and Political Observations upon the Bills of Mortality with reference to the Government, Religion, Trade, Growth, Air, Disease, and the Several Changes in the City of London*, the bills are considered as a political material unto themselves for the first time. By taking the data from fifty years of bills and creating what is widely considered to be one of the first works of demography, Graunt was able to identify the movement of plague across the metropolis over the course of decades, observing patterns in both the occurrence and the kinds of mortality. He also reported unprecedented calculations such as the ratio of male to female births in the city; he produced a 'life table' showing the probability of death at

different ages; he calculated the time-trends of various diseases in relation to changes in the size of the population, the effect of re-classification and identification of disease on the accuracy of reports, the estimated size of the population based both the vital statistics and immigration reports, etc.¹⁰⁸ He also showed the surprising regularity of social issues such as suicide, polygamy, and ‘the Growth of the City’.¹⁰⁹ Through the creation of a detailed grid of analysis, Graunt’s *Natural and Political Observations* shifts the interpretive gaze decisively away from the momentary anticipation of death to the abstract consideration of an extensive series of events, introducing the legibility of an invisible order within the chaos. Graunt shows that there is a singularity, a new form of knowledge and identity to be observed in the mass of numbers, which is both useful for the state and irreducible to the individual.

Graunt’s colleague, William Petty gives this type of work a name: political arithmetick. As Petty insists, the state must turn away from the tradition of ‘comparative and superlative Words, and intellectual Arguments’ and decisively embrace the ‘Terms of Number, Weight, or Measure’ as the basis for calculating the wealth of the nation.¹¹⁰ In Petty’s *Political Arithmetick* of 1690, we see a method that would strategically enumerate the State’s power in relation to other trading nations and ‘take stock’ as Cobbett might have said, of the population and their productivity as a coherent structure. In Petty’s *Political Anatomy of Ireland*, we also see an explicit link, via Bacon, between the refinement of quantitative accounts of society and the scientific study of human anatomy. The *Anatomy* is introduced as an enlightenment political geography of the body:

Sir Francis Bacon, in his *Advancement of Learning*, hath made a judicious Parallel in many particulars, between the Body Natural, and

¹⁰⁸ A list of Graunt’s achievements are provided in Kenneth J. Rothman, ‘Lessons from John Graunt’. *Lancet*. 1996;347:37-39., quoted in Morabia, *A History of Epidemiologic Methods and Concepts*, 10-11.

¹⁰⁹ John Graunt, ‘Natural and Political Observations Mentioned in a following Index, and Made Upon the Bills of Mortality’, in *The Economic Writings of Sir William Petty, together with The Observations upon Bills of Mortality, more probably by Captain John Graunt (Vol. II)*, ed. Charles Henry Hull (Cambridge: Cambridge University Press, 1899) 378.

¹¹⁰ William Petty, ‘Political Arithmetick’, in *Economic Writings (Vol. I)*, 244.

Body Politick, and between the Arts of preserving both in Health and Strength: And it is as reasonable, that as Anatomy is the best foundation of one, so also of the other; and that to practice upon the Politick, without knowing the Symmetry, Fabrick, and Proportion of it, is as casual as the practice of Old-women and Empricks.¹¹¹

Petty's *Anatomy* took the principles of Graunt's life tables and elaborated them as a theory of statecraft that identified the body of the sovereign with that of society. Petty's comments on Bacon reinforce these analogical links, while at the same time insisting on the application of an enlightened practice upon both. In his criticism of 'Old-women and Empricks' he furthers the distinction between a trained physician such as himself, able to calculate and reveal the laws of the social body, with the 'searchers' and other lay officers of the plague administration who were employed to collect and examine corpses to determine their cause of death based on empirical observation. Petty believed that the practice of a political anatomy would articulate the true form of the social body and not merely the superficial condition of one of its members.

Although the work of Graunt and Petty was aligned with the proper functioning of a sovereign state, the interests of the mercantile class in England were simultaneously inventing new forms of self-regulation that would become integral to the governance of the city. One of the most notable of these, if perhaps overlooked in urban history, has been the laissez-faire and privately organised practice of fire insurance that emerged after the Great Fire of London. Private fire insurance, even more so than the Rebuilding Act passed in 1677, signaled the arrival of a new way of looking at the city, incorporating Petty's Political Arithmetick into a consistent and permanent logic of calculation, integrally linked to the condition of the built environment.

The builder and speculator Nicholas Barbon, who made a fortune building cheaply and quickly in the years following the Great Fire of London in 1666, established the first joint fire insurance company, The Sun, in

¹¹¹ William Petty, 'The Political Anatomy of Ireland', in *Economic Writings* (Vol. I) 129.

1680.¹¹² Fire insurance was modelled on maritime insurance, but instead of insuring ships at sea, The Sun would insure individual homeowners and buildings in London with private fire services and indemnities. The enterprise was unmistakably a merchant's logic, equating ships with buildings, and based on the striking premise that living in the city carried the same risks associated with the venture of maritime trade. Fire was now regarded as a variable of a permanent potential hazard, denoted by the architectural unit of the house and the particulars of its location in the city, its position in relation to adjacent structures, its material construction, its size, monetary value, and an inventory of other spatial, material, and abstract calculations. A number and insignia secured to the outside of a house – the fire mark – designated membership of the insurance scheme and was linked to the policy number, allowing the insurance company's fire corps to identify the insured home when extinguishing fires.¹¹³ Fire marks represented a private and commercial systemisation of the city that predated any legal mandate to number houses in England, locating policyholders not only in their parish but specifically in their own home.



Fig. 4: The Sun, firemark 61780 (Museum of London).

More than simply adding up the value and assets of a house, fire insurance asked questions about its policyholders; it placed them physically and architecturally in the city. It counted men and things and weighed them against a consideration of risk. The importance of the scheme lay in its

¹¹² Harry M. Johnson, 'The History of British and American Fire Marks', *The Journal of Risk and Insurance*, Vol. 39, No. 3 (Sep., 1972) 406.

¹¹³ Johnson, 'The History of British and American Fire Marks', 407.

meticulous valuation of space, its segmentation and designation in the administration of the insurance policy, and the indirect contractual discipline that it represented for the architecture of the city. But if fire insurance provided a degree of discipline and security for those who could afford to protect themselves against the threats of the future, we should remember that it actively excluded the idea of the general population, and in some sense it even attempted to insure the bourgeoisie *against* the hazards of cohabitation with the rest of 'the population'.

The questions raised by these techniques are clearly questions about the city. Political arithmetick and fire insurance show us the large-scale concentration of the population and the effort to quantify and interpret the problems created by that concentration. In the 17th century these techniques were isolated, dealing with problems that were not yet linked or generalised under the rubric of the city. Their convergence and intensification only occurs in the early nineteenth century when the growth of the city is met with a new crisis: the dramatic mortality of the cholera epidemic. Cholera, which spread along trade routes from India, reached Britain in 1831 with devastating effect. By the end of its first appearance in Britain, it killed approximately 20,000 people. In its second visitation in 1848, it killed over 52,000. Cholera was visceral and sudden, and victims usually died within twenty-four hours from diarrhoea and vomiting.¹¹⁴ However, unlike the more deadly tuberculosis, cholera was statistically fatal for only half of those who contracted the disease. Cholera was not the primary or even the most certain cause of death in the UK, but it was by far the most frightening. This spectacle of sudden death drew political attention not only to the epidemic but also to the host of other fevers and infections that persistently plagued the population. As physicians and social reformers argued, cholera was merely the most dramatic manifestation of a much larger condition of crisis that could not be contained by exceptional techniques of disaster relief or plague administration. The persistent threats posed by the interlocking factors of poverty, disease, and overpopulation created the conditions for a permanent administration of biopower through statistical analysis and spatial reforms.

¹¹⁴ Morabia, *A History of Epidemiologic Methods and Concepts*, 16-17.

The sanitary reform movement of the nineteenth century was founded on this intersection of science and bureaucracy, which increasingly demanded ever more detailed statistical calculations for its common language of analysis. Armed with the quantitative attention that characterised the demography of the bills of mortality and the comparative and speculative attention demanded by the actuaries of fire insurance, the statistics of the 1830s and 40s looked with investigative scepticism at the conditions of the population as a matrix of co-relational disease vectors. No longer simply a matter of counting burials and monitoring the towns through which diseases spread, statistics provided a detailed quantitative description of the lives of city dwellers and speculated on the causes, as much as on the effects of disease. Granted, the modern decennial census had been instituted in the UK as early as 1800, establishing an official interest in the biometrics of the living, and not only the dead, but the use of statistical analysis in the daily governance of the city only becomes a reality with the establishment of the Statistical Societies of Manchester (founded in 1833) and London (1834), and subsequently the General Register Office (1837). Founded in the wake of cholera, these institutions were explicitly organised in metropolitan centres where epidemic outbreaks shaped the crisis of the population as a definitive condition of the city.

The statistical societies were not set up as reforming organisations, but rather regarded themselves as providing the basic social facts as a matter of scientific precision. More than a procedural interest in the ‘vital statistics’ of birth and mortality covered by the census or the ‘moral statistics’ of crime and vice gathered by local police, the statistical societies were especially concerned with the problem of ‘sanitary statistics’, which involved the direct investigation of these factors and their correlation with the hygienic environment of the city.¹¹⁵ In seeking the origins of disease, the population and its environment is under scrutiny as a biopolitical and pathogenic substance. We see in sanitary statistics the rise of a vast array of categorical

¹¹⁵ Karl M. Metz, ‘Social Thought and Social Statistics in the Early Nineteenth Century: The Case of Sanitary Statistics in England’ *International Review of Social History*, 29(1984): 256, note 8.

analyses that attempt to discover the patterns of growth, behaviour, composition, and future trajectory of the population in relation to all manner of social and environmental factors. As Theodore Porter writes:

‘Population was no longer something pliable, to be manipulated by enlightened leaders, but the product of recalcitrant customs and natural laws which stood outside the domain of mere politics. Government could not dominate society, for it was itself constrained by society.’¹¹⁶

Constraint was seen as a kind of scientific virtue within the statistical societies, where they primarily rationalised their practice within a self-imposed mandate to act as the impartial repository of social facts. The motto of the London Statistical Society was *Aliis exterendum* (‘to be threshed out by others’) ¹¹⁷ and they regarded their work as a public service and a social science, through which policy and public opinion could be shaped. As stated in their official journal in 1838:

‘Like other sciences, that of Statistics seeks to deduce from well-established facts certain general principles which interest and affect mankind; it uses the same instruments of comparison, calculation, and deduction: but its peculiarity is that it proceeds wholly by the accumulation and comparison of facts, and does not admit of any kind of speculation.’¹¹⁸

This ostensible neutrality gave the field the appearance of a general utility, with license to investigate all areas of social fact. The conviction that statistics should be an objective and neutral practice, conveying facts that needed only to be unearthed by calculation, both minimised the subjectivity of the statistician and maximised the field’s powerful descriptive naturalism.



Fig. 5: Seal of the Statistical Society of London.

¹¹⁶ Theodore Porter, *The Rise of Statistical Thinking 1820-1900* (Princeton: Princeton University Press, 1986) 26.

¹¹⁷ Also noted by Porter, *The Rise of Statistical Thinking*, 36.

¹¹⁸ Anon, "Introduction," *Journal of the Royal Statistical Society*, 1 (1838): 1, 3, quoted in Porter, 36.

However logical this rationale appeared from the standpoint of the nascent social sciences, there still existed a latent tension in the dominant interpretations of statistics throughout the nineteenth century. On the one hand, it was a methodology that was founded on the study of variables, where outcomes took the form of ratios, proportions, and rates. On the other hand, it was the express goal of many statisticians and social reformers to organise the field around the idea of social *laws*, rather than probability. In its applications, statistical patterns were often interpreted as principles that could be proven true under all circumstances. William Farr, the first superintendent of the statistical department of the General Register Office and one of the most influential statisticians of the nineteenth century, merely demonstrates a widely held conviction when his report 'On the Law of Recovery and Mortality in Cholera Spasmodica' (1838) contains the stated goal to '[show] that the law which regulated the disease...was as precise as any of those which guided the heavenly bodies in their courses.'¹¹⁹ After thirty-seven years of work, Farr continued to insist on the elevation of statistics to the level of celestial mechanics, referring in 1875 to the English death records as 'reduced to mere units undergoing changes as purely physical as the setting stars of astronomy or the decomposing atoms of chemistry'.¹²⁰

Farr's convictions were shared by the Belgian astronomer and mathematician Adolphe Quetelet, who set the precedent for such claims in the 1830s with his highly influential interpretation of 'social physics' and 'social mechanics'.¹²¹ Quetelet applied his understanding of astronomical physics to the development of social statistics, theorising a doctrine of *l'homme moyen*, or 'the average man'. The implication was that human 'types'

¹¹⁹ William Farr, 'On the Law of Recovery and Mortality in Cholera Spasmodica', *Lancet*, (1838-9): 26. Referenced in Margaret Pelling, *Cholera, Fever and English Medicine 1825-1865* (Oxford: Oxford University Press, 1978) 86.

¹²⁰ William Farr, 'Letter to the Registrar-General on the Mortality in the Registration Districts of England during the Years 1861-70', *Supplement to the Registrar General's Thirty-Fifth Annual Report*, (1875): 3.

¹²¹ Quetelet was a member of the London Statistical Society and his work was popularized in the English-speaking world with the translation of his book *A Treatise on Man and the Development of his Faculties* (Edinburgh: William and Robert Chambers) 1842.

within the population could be isolated and studied by regular comparison to the statistical mean. For Quetelet, the vital, moral, and sanitary statistics of the population were the raw materials from which one could derive a single representative figure that could then be used as a benchmark for biopolitical regulation. As Porter writes, 'Quetelet maintained that this abstract being, defined in terms of the average of all human attributes in a given country, could be treated as the "type" of the nation, the representative of a society in social science comparable to the center of gravity in physics.'¹²² Any variation in human physiology, character, or hygiene could then be judged to be either less than or more than *l'homme moyen* with statistical accuracy. In the preface to his *Treatise on Man and the Development of his Faculties* (1842), Quetelet writes that, 'We may consider maladies like deviations from the normal state, be it more or be it less; and it is betwixt these contrary conditions that the state of health would be found.'¹²³

The Normal and The Pathological

We should pause at Quetelet's use of the term 'normal'. Just as the statistical societies and social reformers of the city provided a new and ever-expanding grid within which to account for and to analyse the living and the dead, they also brought to bear new criteria of judgement upon these categories, a criteria typified by the 'normal' and its counterpart, 'the pathological'.¹²⁴ Ian Hacking and George Canguilhem have provided etymological accounts of the normal that link it to geometry and the right angle (*norma* in Latin, *ortho* in Greek), a term that is imbued with both metrical fact and subjective value. They both agree that the terminology makes its entrance into social analysis not as a singular term, but as a relational one, linked to the pathological. This is the use that Auguste Comte makes of it when he introduces it in his 'sociology' as a set of concepts

¹²² Porter, *The Rise of Statistical Thinking*, 52.

¹²³ Quetelet, *Treatise on Man and the Development of his Faculties* (1842) x.

¹²⁴ Hacking on 'normal': 'Its opposite was the pathological and for a short time its domain was chiefly medical. Then it moved into the sphere of – almost everything.' [Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990) 160.]

directly from biology and medicine.¹²⁵ It is the doctor's use of the normal and the pathological that Quetelet borrows and Comte insists is the basis for social science. Comte cites the French physician Victor Broussais in particular as both a philosopher and a biologist, praising him for having '...proved the principle that the phenomena of Disease are essentially homogeneous with those of Health, the only difference being one of comparative intensity.'¹²⁶ Like Quetelet, Comte uses a principle of quantitative variation, either above or below the norm, to make a scientific claim about the social. However, with Comte, the reference point is not derived from the abstraction of statistics but from the physiological investigation of the body. In Comte's positive philosophy, he claims that it was Broussais (and not Bichat or Pinel) who linked pathology with physiology in the early nineteenth century, asserting that all diseases have a location in the body, whether in the organ or the tissue.¹²⁷ Commenting on Broussais, Comte writes:

The pathological condition is to the physiological simply a prolongation of the limits of variation, higher or lower, proper to each phenomenon of the normal organism; and it can never produce any entirely new phenomenon. Therefore, the accurate idea of the physiological state is the indispensable ground of any sound pathological theory; and

¹²⁵ Dorothy Porter has also observed the importance of Comte to the intersection of medical and social thought in the nineteenth century and cites Canguilhem as an important source for thinking about the implications of this moment. [Dorothy Porter, 'Introduction', *Social Medicine and Medical Sociology in the Twentieth Century* (Amsterdam & Atlanta, GA: Rodoti, 1997) 2.] One objection I have to Porter's treatment is the repeated use of the phrase 'organic analogy' in social medicine / medical sociology. I maintain throughout the thesis that the concepts are more than literary or rhetorical in character. What we are dealing with when statisticians and sanitary reformers employ terms from physics and biology is not an analogy or a metaphor, but, more in keeping with their own forms of reasoning, they are 'correlations', or as Ian Hacking has even suggested – a 'logical syllogism'. [Hacking, *The Taming of Chance*, 65.]

¹²⁶ August Comte, *System of Positive Polity Vol.I* (London: Longmans, Green, and Co., 1875) 526-527. Canguilhem succinctly describes this as 'quantitative variation' in *The Normal and the Pathological*. He illustrates the distinction by observing that, 'Semantically, the pathological is designated as departing from the normal not so much by *a-* or *dys-* as by *hyper-* or *hypo-*.' George Canguilhem, *The Normal and the Pathological* (New York: Zone Books, 1991) 42.

¹²⁷ Canguilhem, *The Normal and the Pathological*, 47.

therefore, again, must the scientific study of pathological phenomena be the best way to perfect our investigations into the normal state.¹²⁸

Not only does Comte link the normal and the pathological to physiological investigation, he also emphasises that within this context, the normal always proceeds from an investigation of the pathological and not the other way around. In *The Normal and the Pathological* (1944), Canguilhem puts this in its proper therapeutic context when he observes that medicine always proceeds from the perception of a problem, towards the recovery of a normal state: ‘To govern disease means to become acquainted with its relations with the normal state, which the living man – loving life – wants to regain.’¹²⁹

However, Canguilhem importantly observes that Comte’s bio-sociology tends to reproduce the very same conflations between fact and value made by the statisticians in their search for normal conditions. As Canguilhem argues, the normal and pathological are terms that do not describe laws of certainty, they describe norms, which are also value judgements: ‘This normal or physiological state is no longer simply a disposition which can be revealed and explained as a fact, but a manifestation of an attachment to some value.’¹³⁰ To put this differently, one could say that society does not provide an absolute or a priori reference by which to measure Quetelet’s *l’homme moyen* or Comte’s ‘normal’ and their resultant findings cannot be said to constitute laws of any observable kind.

Nonetheless, this imputation of value was not an obstacle to taking up a broadly conceived scientific programme of analysis by statistical societies and social reformers. On the contrary, as Petty’s *Political Anatomy* now seems to foreshadow, the space of social facts and the anatomical classifications of

¹²⁸ August Comte, *Positive Philosophy of Auguste Comte, Freely Translated and Condensed by Harriet Martineau* (New York: Calvin Blanchard, 1855) 312. In *The Birth of the Clinic*, Foucault describes this as the transition from the ‘class’ of disease to its ‘seat’ in the body. He characterizes this by juxtaposing two kinds of questions from doctor to patient: ‘what is the matter with you?’ becomes ‘where does it hurt?’ [Foucault, *The Birth of the Clinic*, xxi.]

¹²⁹ Canguilhem, *The Normal and the Pathological*, 44.

¹³⁰ *Ibid.*, 56-57.

medicine were widely seen to be not only analogous, but in a sense based on the same premise: that natural science and social science, if pursued with the appropriate method, could be considered different scales of the same field.¹³¹ It is in this conflation that we can make sense of Comte's enthusiasm for the link between pathology and physiology. With the discovery of a physical location of the pathological, an empirical process of investigation could proceed – one which was easily extrapolated to the field of social analysis:

The collective organism, by virtue of its higher complication, is liable to disturbances even more serious, more varied, and more frequent than the individual organism. There can be no doubt that the principle of Broussais is applicable here also; and in fact I have myself frequently made use of it in verifying or in developing sociological laws.¹³²

Comte introduces an explicitly physio-pathological framework through which to analyse the population – one that is all the more quickly taken up within a field of social analysis that is preoccupied with questions about the quantitative variation of city dwellers, their bodies, and their spaces. This is not the classical, topological social body of Hobbes's Leviathan, but an unmistakably biological figure. Indeed, Comte's sociology was amenable to the very problems of the statisticians and social reformers precisely because he derived the conceptual basis from the same source as the political problem itself: the body, its physiology, and the problem of disease. The sanitarian Benjamin Ward Richardson was emphatic on this very point and described sanitary reform as 'The Clinical Examination of the Sick Town'.¹³³ Even more broadly, he argued that 'All political troubles have a physiological cause. To the statesman not less than to the physician, physiology is the only true

¹³¹ Lawrence Goldman, 'The Origins of British "Social Science": Political Economy, Natural Science and Statistics, 1830 – 1835' *The Historical Journal*, Vol. 26, No. 3 (Sept. 1983): 601.

¹³² Comte, *System of Positive Polity*, 527-528. In Comte's epistemology, there are three stages that mankind passes through on his way towards positive knowledge: theology, metaphysics, and science. In *August Comte and Positivism* (1865) John Stuart Mill comments that the problem with metaphysical knowledge is that it is 'mistaking abstraction for reality'. Although obviously critical of metaphysical knowledge, Comte's extrapolation of experimental physiology to the realm of sociological fact certainly walks the line of metaphysical insight. [John Stuart Mill, *August Comte and Positivism* (London: N. Trübner & Co., 1865) 16.]

¹³³ Edwin Chadwick, *The Health of Nations, A review of the Works of Edwin Chadwick with a Biographical Dissertation by Sir Benjamin Ward Richardson. Volume II* (London: Longmans, Green, and Co., 1887) 318.

source of knowledge.¹³⁴ Historian Graeme Davison has observed that the sanitarians of the public health movement ‘recognized a direct parallel between the “internal” and “external” aetiology of disease: as a patient became feverous if his blood was overcharged with the products of decomposed organic matter, so, if the city’s ‘arteries’ were piled high with garbage, an epidemic might erupt.’¹³⁵ Epidemiology provided the necessary link between the individual body and the social body, and investigation into ‘pathological’ conditions of the city allowed enlightened observers to formulate an idea of the ‘normal’ industrial city, even in the face of extremely ‘abnormal’ conditions.

III. Location: Pathogenesis

Even more important than the general link between the body and the city is the more specific concept of *location*. In the physiological paradigm identified by Comte, the specificity of location was crucial for an understanding of the pathological condition. The biopolitics of statistical and social analysis were not only a process in which the population became the subject or figure of governmental concern, it was also a re-territorialisation of the city: the population could be located in space and defined in relation to their environments, which were, in the interests of the statistician and the physician, the physiology of the city. As Canguilhem declared in the first line of *The Normal and the Pathological*: “To act, it is necessary at least to localize.”¹³⁶

The localisation of pathology within the city involves at least two distinct spatialisations. The first we have already suggested: the abstract, primary spatialisation of growth, quantity, and the physiological model of the normal and the pathological. But we would be mistaken to assume that

¹³⁴ Benjamin Ward Richardson, *The Future of Sanitary Science* (London: Macmillan and Co., 1877) 30.

¹³⁵ Graeme Davison, ‘The City as a Natural System: Theories of Urban Society in Early Nineteenth century Britain’ in *The Pursuit of Urban History*, edited by Derek Fraser and Anthony Sutcliffe (London: Edward Arnold, 1983) 362.

¹³⁶ Canguilhem, *The Normal and The Pathological*, 39.

statistics or physiology, alone or together, could stand in for a detailed empirical account of the city and the population itself. How does this empirical account proceed? Through the employment of inspectors, through the observations of city doctors, and through voluntary and commissioned work of social reformers. Walking the streets, examining patients, recording conditions, mapping disease incidence, and drawing up tables characterised the work of a new class of social investigator that came to the fore in the years of the first cholera epidemic. In 1832, James Phillips Kay described the ‘duty’ of the bourgeois physician to ‘follow the steps of this messenger of death,’ and to ‘descend to the abodes of poverty [...] in the centre of our large towns, and behold with alarm, in the hot-bed of pestilence, ills that fester in secret, at the very heart of society.’¹³⁷ To bare witness to the pathological city and record its condition in detail was to inspect both the individual bodies of the poor and to reveal and locate the hidden pathology within the social body.

The medical body of the patient, the social body of the city, and the statistical body of the population are irretrievably caught up in a conceptual circuit of equivalence and correlation, held together by the persistent and scientifically-minded gaze of the inspector. This relationship, and the central role played by the figure of the city, is codified in the institutions and publications of the sanitary reform era. The creation of a Select Committee on the Health of Towns in 1838, and then the Health of Towns Association in 1844, followed by the first Public Health Act in 1848 mark the key milestones in parliamentary reform. The Health of Towns Association in particular was expressly established to ‘substitute health for disease, cleanliness for filth, order for disorder, economy for waste, prevention for palliation, justice for charity, enlightened self-interest for ignorant selfishness and to bring to the poorest and meanest - Air, Water, Light.’ The reports of physicians such as JP Kay, Dr. Neil Arnott, and Dr. Southwood Smith in the early 1830s were followed by perhaps one of the

¹³⁷ James Phillips Kay, *The Moral and Physical Condition of the Working Classes employed in the Cotton Manufacture in Manchester* (London: James Ridgeway, 1832) 66.

most important investigative reports of the nineteenth century, the *Report of the Sanitary Condition of the Labouring Population of Great Britain*, published in 1842 under the direction of Edwin Chadwick. The Chadwick report, to which we will return, included papers by all the leading figures of the sanitary reform movement and was a direct petition for the reform of local government institutions and the direct intervention into the sanitary infrastructure of the city.

In *Cities Perceived* (1985), historian Andrew Lees also provides us with a useful cross-section of the literature that appeared in the mid nineteenth century purporting to reveal and to specify the spaces of the city as a problem of public health. These included the many publications of the Health of Towns Association. Promoting the work of the association and their social cause, the physician William Augustus Guy published *Unhealthiness of Towns: Its Causes and Remedies* in 1845, while Hector Gavin wrote *Unhealthiness of London, and Necessity for Remedial Measures* in 1847. These were followed by texts such as John Edward Morgan's *The Danger of Deterioration of Race from the Too Rapid Increase of Great Towns* (1865) and Balthazar Foster's *How We Die in Large Towns* (1875).¹³⁸

Between the statistical calculations of William Farr, the theoretical developments of Comte and Quetelet, and the physical and environmental investigations of Kay and Chadwick, one can detect the emergence of a new level of discourse, and the shaping of a new expertise. The historian of science Erwin Ackerknecht has observed that, 'the public health movement has produced a new type of doctor, the nontreating doctor. For the first time in history large numbers of medical men no longer treat individuals but deal exclusively with the health of larger groups of people.'¹³⁹ The doctor of public health takes up his position as the arbiter of two spatialisations of knowledge – the abstract definition of the disease and the empirical encounter with the body, now conceptually dispersed into circulation between the population

¹³⁸ Andrew Lees, *Cities perceived: Urban Society in European and American Thought, 1820-1940* (Manchester: Manchester University Press, 1985) 25-6.

¹³⁹ Erwin H. Ackerknecht, *A Short History of Medicine* (New York: The Ronald Press Company, 1955) 200.

and the city. As Foucault has said, doctors became the ‘specialists of space’.¹⁴⁰ More importantly, the doctor of public health becomes the specialist of space from a certain vantage point – one between the body and its representations, revealing knowledge that was not available at the level of the individual patient. A new form of knowledge, previously inconceivable, becomes available to medicine and to government. Or, as George Canguilhem writes, ‘The disease which never existed in the man’s consciousness begins to exist in the physician’s science.’¹⁴¹

Typical of this principle is the proliferation in the mid-nineteenth century of new maps drawn up for the purposes of social and epidemiological investigation. Medical maps, sanitary engineering maps, population maps and maps of poverty were all produced in an effort to visualise, localise, and correlate the crisis of the city with various hypothetical vectors. In the specific case of the medical map, Tom Koch argues that they were, ‘from the start a tool for the self-conscious testing of spatial propositions, arguing a relationship between health and place, and between the locus of specific disease incidence and suspected sites of local infectious generation.’¹⁴² Every map produced a new image of the city and a new understanding of its form.

When Dr. John Snow published his essay *On the Mode of Communication of Cholera* in 1849, he put forward a claim that went against all accepted wisdom about the disease, which was understood to be a ‘miasmatic’ air-borne substance. Miasma, or the infectionist theory of disease communication, asserted that disease was a local, invisible, and toxic emanation from ‘filth’, decomposing waste, or stagnant water. As an ethereal force, miasma was considered a corruption of the air, but also implicated the bodies and spaces from which it entered the air as active participants in its transmission.¹⁴³ But as Snow tried to prove in his study of Soho, in London,

¹⁴⁰ Foucault, ‘The Eye of Power’ 150.

¹⁴¹ Canguilhem, *The Normal and the Pathological*, 92.

¹⁴² Tom Koch, ‘Mapping the Miasma: Air, Health, and Place in Early Medical Mapping’ *Cartographic Perspectives*, 52 (Fall, 2005): 4.

¹⁴³ Felix Driver, ‘Moral Geographies: Social Science and the Urban Environment in Mid-Nineteenth Century England’ *Transactions of the Institute of British Geographers*, New Series, Vol. 13, No. 3 (1988): 278.

cholera was on the contrary a water-borne agent, and in this particular case, it could be attributed to a polluted water source in the neighbourhood: the Broad Street pump. It was only in the expanded second edition of Snow's report in 1855 that he included a now famous map that depicts the Broad Street neighbourhood with the distribution of deaths from cholera in 1854 marked on the map in black lines.¹⁴⁴ The concentration of black around the vicinity of the pump gave concrete expression in the space of the city and in the mind of the reader to what was a controversial aetiology in its time. To this day, it is the map we remember, carrying the 'burden of proof', as Koch says.¹⁴⁵

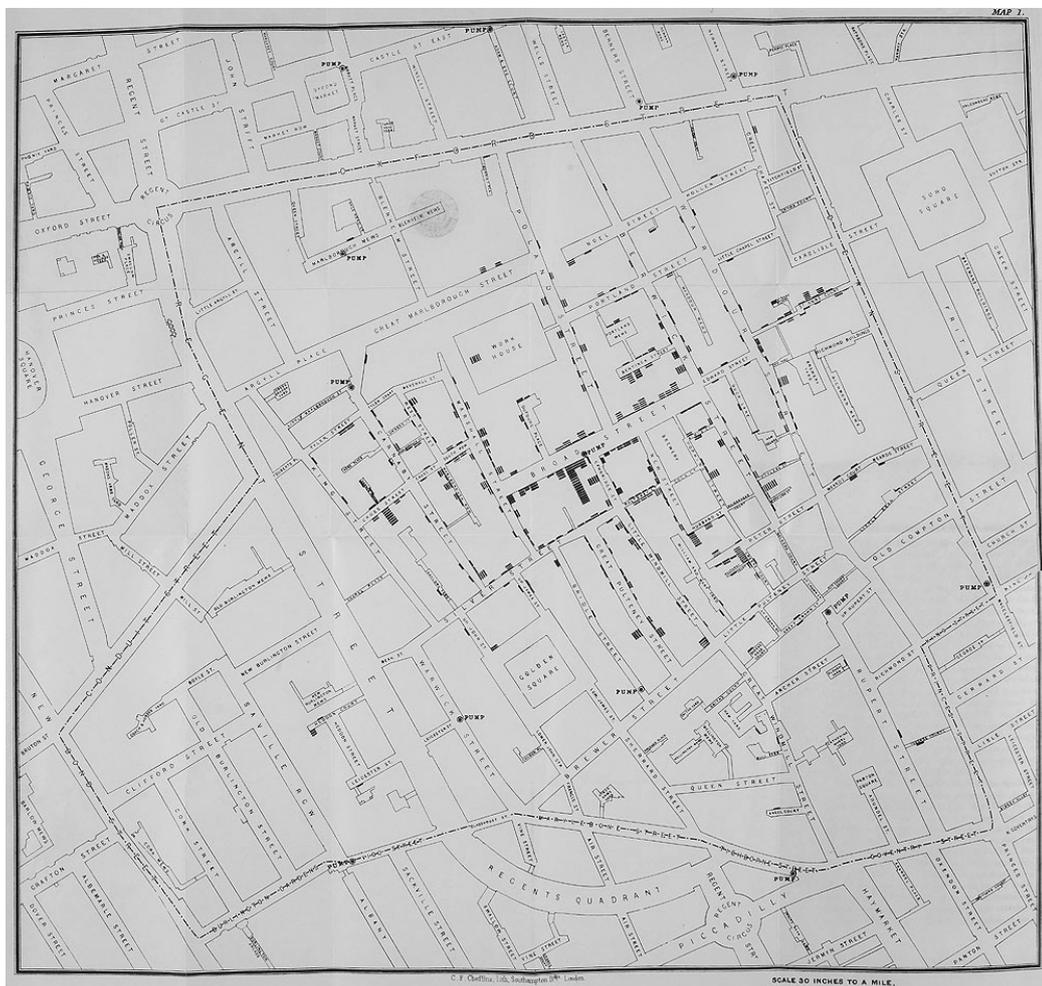


Fig. 6: Snow's map of Soho, showing the concentration of cholera deaths around the Broad Street water pump (1855, British Library collection).

¹⁴⁴ E.W. Gilbert, 'Pioneer Maps of Health and Disease in England' *The Geographical Journal*, Vol. 124, No. 2 (June, 1958): 174.

¹⁴⁵ Koch, 'Mapping the Miasma', 4.

Miasma and Milieu

The location of disease was especially important at a time when the actual bacteriological basis for much disease was unknown to medical science. In the absence of a clearly defined pathogen, the territorial figure of the miasma took on an ambiguous materiality. For sanitary reformers, the miasma could be put into the service of both empiricism and metaphysics. Something that could not be observed was nonetheless scrupulously seen in everything. Thomas Osborne has pointed out the way in which the environment began to appear to sanitarians as a positive space in relation to disease, 'not as something to be "subtracted", but as a determinant of the disease itself.'¹⁴⁶ If we amplify the formal qualities of this only slightly, we might say that disease in the nineteenth century was akin to a solid space – it sought a mechanistic, tangible expression of its form. In this sense, even though Snow's key observation of the water-borne nature of cholera would have important implications for the subsequent management of sewerage, it was not as decisive of a break with the miasmatic theory as it might first appear. In many cases, any illustration that could emphasise the way in which disease invisibly but palpably 'touched' everything seems to be significant. Fire and disease, air and disease, filth and disease, water and disease – it is a search for an adequate description of the space of the miasma – the physical texture of the space between people. So, although, in his introduction to a collection of sanitary tracts from the 1830s, William Simpson describes miasma as 'a poison...capable of producing instantaneous death by a single inspiration of the air in which it is diffused', he also chooses a description of flooding rather than mere emanation to better evoke its weight and volume:

In an inundation about 1838, or 1839, which happened in the night, this bank overflowed its boundaries, and regurgitated into petty drains, communicating with houses 100 yards distant from its line. Many inhabitants were floated in their beds, and a large amount of fever occurred from the damp and exhalations which it occasioned. Here and there, stagnant water, and channels so offensive that they were declared to be unbearable, lie under the doorways of the uncomplaining poor; and privies, so laden with ashes and excrementitious matter as to be

¹⁴⁶ Thomas Osborne, 'Security and Vitality: Drains, Liberalism and Power in the Nineteenth Century.' In *Foucault and Political Reason*, edited by Andrew Barry, Thomas Osborne, and Nikolas Rose (Chicago: University of Chicago Press, 1996) 113.

unusable, prevail, till the streets themselves become offensive from deposits of this description.¹⁴⁷

It was the unenviable job of the investigator, as Kay describes, to provide the record of these spaces and to judge their pathology. The environment was to be confronted by the senses of the bourgeois observer, who became attuned to its physiology through repeated visits. Kay describes how the pathological city is first sensed as an empirical presence, not unlike one's own state of health:

Self-knowledge, inculcated by the maxim of the ancient philosopher, is a precept not less appropriate to societies than to individuals. The physical and moral evils by which we are personally surrounded, may be more easily avoided when we are distinctly conscious of their existence; and the virtue and health of society may be preserved, with less difficulty, when we are acquainted with the sources of its errors and diseases.

The sensorium of the animal structure, to which converge the sensibilities of each organ, is endowed with a consciousness of every change in the sensations to which each member is liable; and few diseases are so subtle as to escape its delicate perceptive power. Pain thus reveals to us the existence of evils, which, unless arrested in their progress, might insidiously invade the sources of vital action.¹⁴⁸

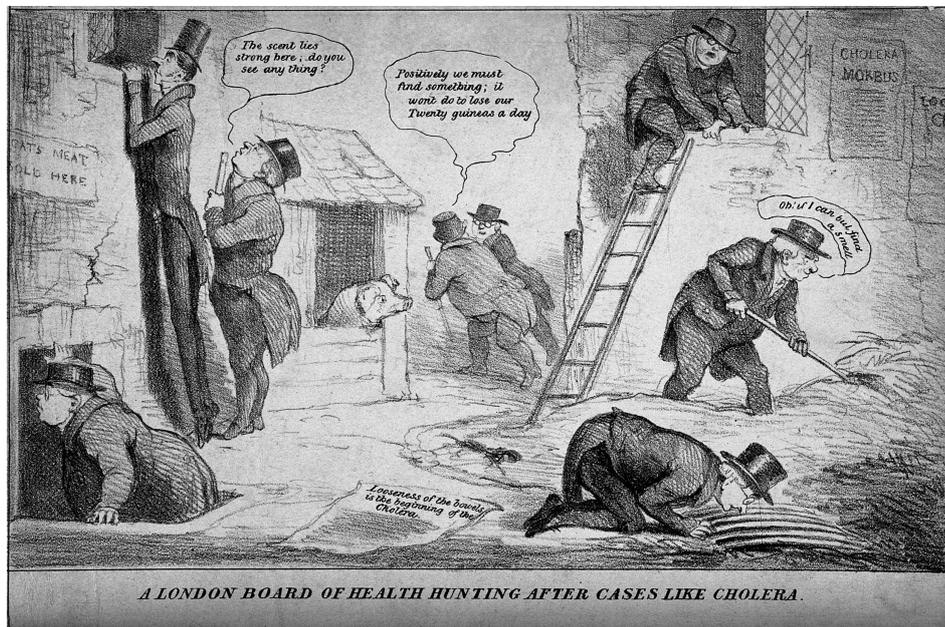


Fig. 7: An 1832 cartoon showing London Board of Health inspectors searching for the 'cholera morbus' (Wellcome Library, London).

¹⁴⁷ William Simpson, *Health of Towns. A Digest of Several Reports on Sanitary Reforms: Containing the Views of E. Chadwick, Dr. Southwood Smith, and Others* (London: Henry Renshaw, 1849) 7, 10.

¹⁴⁸ Kay, *The Moral and Physical Condition of the Working Classes*, 17.

However, this dialectic that Kay stages between the intero- and exteroceptive conditions of the environment and the body are not literary flourishes or metaphors but reflect the complex thinking that took place in sanitary investigation on the very notion of the environment, or milieu, of the city. In his 1947 lecture *The Living and its Milieu*, (mentioned in chapter 2) Georges Canguilhem makes clear the Newtonian origins of the concept and its mechanistic terms through the first half of the nineteenth century.¹⁴⁹ This is perhaps already obvious in my description of the tangibility and solidity of the miasma concept, but it also informs the general equivalence of the environmental and the physiological: both are understood to have an organised, functional basis. As Canguilhem writes:

From the biological point of view, one must understand that between organism and environment there is the same relationship that exists between the parts and the whole within the organism itself. The individuality of the living does not come to an end at its ectodermal boundaries, no more than it begins at the level of the cell. The biological relationship between the being and its milieu is a functional one, and as a result it changes as the variables successively exchange roles.¹⁵⁰

Importantly for public health and statistical analysis, the milieu was also an increasingly *measurable* entity through the work of sanitary investigation. The sanitarians are often preoccupied with overlooked detail and concealed fact.¹⁵¹ Just as the statistical tables defined the districts and parishes that were under investigation, the sanitarians and statisticians segmented and refined their analysis to include all manner of spatial and physical properties. Kay's report of 1832 is merely one example that includes myriad locational marginalia such as the relative condition of roads in specific districts:

...we discover in those districts which contain a large portion of the poor, namely, in Nos. 1, 2, 3, 4, 7, 10, 13, and 14, that among 579 streets inspected, 243 were altogether unpaved – 46 partially paved – 93 ill ventilated – and 307 contained heaps of refuse, deep ruts, stagnant pools, ordure, &c.; and in the districts which are almost exclusively inhabited by the poor, namely, Nos. 1, 2, 3, 4, and 10, among 438 streets inspected, 214 were altogether unpaved – 32 partially paved – 63

¹⁴⁹ Georges Canguilhem, 'The Living and its Milieu', trans. John Savage, *Grey Room*, 3 (Spring, 2001): 8.

¹⁵⁰ Canguilhem, 'The Living and its Milieu', 19.

¹⁵¹ Driver, 'Moral Geographies', 281.

ill ventilated – and 259 contained heaps of refuse, deep ruts, stagnant pools, ordure, &c.¹⁵²

Beyond this, a completely original critique of architecture also takes place – one that is formal, but not concerned with the conventional categories of representation or aesthetics as such. Nonetheless, this formality is comprehensive in its concerns.¹⁵³ In William Woodward's 1886 essay 'The Sanitation and Reconstruction of Central London' he itemises a list of details that are of central importance to the sanitary inspector and of little or no aesthetic value to the architect, including, 'Drains, Ventilation of Drains and Sewers, Water Services, Slop Sinks, Water Closet Apparatus, Wash Houses, Drying Yards, Dust Shoots and removal of Dust, Fire Escapes, Fire Hydrants, Playing Yards, Pavings, Subways, Gullies...' ¹⁵⁴ These features are always in the plural, as the sanitarian is not so much concerned with one dust shoot or one fire escape, as they are concerned with a series of them, identified in specific streets or districts and indicative of more powerful political categories such as epidemic disease or poverty (or both). As William Simpson remarked, 'A medical man who is restricted to the observation of only one establishment may be said to be excluded from an efficient knowledge even of that one.'¹⁵⁵ This represented a complete re-organisation of priorities in the architecture of the city. The sanitarian's gaze brings these features from the margins of architecture to the centre of an environmental concern for the conditions of habitation. Since the body and its milieu are now an intrinsic system, the dwelling and the city *become* the immediate environment – the logical space that must be addressed for the first time by regulation. There is

¹⁵² Kay, *The Moral and Physical Condition of the Working Classes*, 30-31.

¹⁵³ As J.N. Tarn points out: 'One outcome of the close link between housing and public health was the inordinate attention given to curious constructional details. Witness the attention paid to fire-proof construction in a lecture by Henry M. Eyton, architect of the Hull model dwellings built by [The Society for Improving the Condition of the Working Classes], and in another lecture at the Society of Arts, John Taylor described the wide variety of patent devices available to cope with such problems as "vitiating air".' [John Nelson Tarn, *Five Percent Philanthropy. An Account of Housing in Urban Areas Between 1840 and 1914* (Cambridge: Cambridge University Press, 1973) 71.]

¹⁵⁴ William Woodward, 'The Sanitation and Reconstruction of Central London' *Essays on the Street Re-alignment, Reconstruction, and Sanitation of Central London* (London: George Bell & Sons, 1886) 27.

¹⁵⁵ William Simpson, *Health of Towns*, 12.

a biological language to describe architecture that gives it immediate importance.

The local is a complex problem within the logic of epidemic disease, precisely because it seems to move three dimensionally through space without regard for political boundaries. Just as it brought a new level of scrutiny to the dwelling and the alleyway, it also pushed out the municipal boundaries of the city and both segmented and connected districts in new ways. The Public Health Act of 1848 centralised the administration of UK cities by creating the first General Board of Health, which also created the Officer of Health, appointed to individual districts and charged with health inspection in streets and dwellings. In London this was soon followed by a Metropolitan Commission of Sewers, which was perhaps the first government organisation empowered to intervene across all the boroughs of London, consolidating seven of the eight private sewerage companies into one government agency.¹⁵⁶ The map produced for the Commissioners in 1850 shows a drastically expanded and contiguous representation that depicts the city as only a network of roads and waterways. Seven years later, The Metropolitan Board of Works was created; a generalised civil engineering department that again re-defined its scope by using the thirty-six districts of the 1851 census to identify their jurisdiction.¹⁵⁷ As historians Gibbon and Bell write in their administrative history of the city, 'London as a governmental unit began as a statistical area.'¹⁵⁸ The logic of this new territory is reflected even in the institutional transition from the fairly narrow concerns of the Commissioners of Sewers, to The Metropolitan Board of Works, which, by the 1880s had become the London County Council (and in the later 20th century, the Greater London Authority). Between the Sewers, the Metropolis, and the County, the idea of 'greater' London comes into focus, and a whole

¹⁵⁶ Henry Jephson, *The Sanitary Evolution of London* (London: T. Fisher and Unwin, 1907) 41-42.

¹⁵⁷ Sir Llewellyn Woodward, F.B.A. *The Age of Reform 1815 - 1870*. (Oxford: The Clarendon Press, 1962) 464.

¹⁵⁸ G. Gibbon and R.W. Bell, *History of the London County Council 1889-1939* (London: London County Council, 1939) 22-23. Quoted in Woodward, *the Age of Reform*, 464.

series of infrastructural and statistical transformations come to meet the challenge of growth and hygiene in the city.¹⁵⁹

Conclusion

‘A bureaucratic and technocratic myth, the Plan is the modern dress of the idea of Providence.’

– Canguilhem¹⁶⁰

As the remapping of London suggests, the crisis of the city in the nineteenth century was neither symmetrical, nor limited to a notion of the physical body, but rather to a vertiginous ambiguity of the body in relation to its biological and built environment. Disease fundamentally disorganised and re-organised the city around new territories and practices that were defined by new forms of measurement and quantification. These forms of measurement were also forms of judgement, but their fundamental criterion was no longer moral or religious, but biological. The city as a milieu, the population as a social body – these organic and medicalised figures of biopolitical description were governed by the normal and the pathological. But as I described earlier in the chapter, these principles, which sought a scientific veracity, were in fact value judgements once imported into the field of the social – value judgements that found their baseline and their quantitative variations in the consensus of the informed observer and the enlightened government official. The flexibility of these concepts, and their contradictory status as both socially invented and biologically organic is intrinsic to their application within an emerging developmentality of the city.

Indeed, it is within this flexibility that a notion of planning can actually emerge, as the establishment of norms implies not only an average, but an ideal: both a fact and a value. As Canguilhem observed, ‘The concept of normalization excludes that of immutability, includes the anticipation of a

¹⁵⁹ A similar consolidation and re-mapping can be observed in the area of fire protection, where the offices of the fire insurance companies combined to form the London Fire Engine Establishment in 1833, later transferred to the City of London in 1866 to become the London Fire Brigade. [Johnson, ‘The History of British and American Fire Marks’, 407.]

¹⁶⁰ Canguilhem, *The Normal and the Pathological*, 247.

possible flexibility.¹⁶¹ The normal and the pathological environment of the city will require the constant revision of maps, the constant recounting of the population and retabulation of its features, revealing change over time and place, and working to predict the direction these changes will take in the future. Far from an imperative to stop growth, the government's work would now be to respond, forecast, predict, plan, and manage the categorically defined events and forms of life in the city. It is this management of the *urban*, via the tools of civil engineering and architectural regulation that we turn to in the next chapter.

¹⁶¹ Canguilhem, *The Normal and the Pathological*, 247.

4. THE SERVICED ENVIRONMENT

I. Introduction

The previous chapter addressed the city of the nineteenth century as it emerged as an object of developmental biopower. I tried to show that the space of the city and the population in the early nineteenth century became objects of governance through an explicit medical and biological problematisation, where the physiological body formed the basis for a rational articulation of the body politic. This logic was not only the basis for a new organicism, but an expression of the liberal logic of reform, in which the attention to the body, its multitudes, and the environment through which it circulates, becomes a permanent project of correction, improvement, and development. As a consequence of this ‘developmentality’, these discourses were not only descriptive of the state of the city, they were prescriptive of a certain kind of action within it. This chapter describes the spatial terms of these actions and their consequences for the status of the city.

In the first part of the chapter I develop the notion of ‘location’ from the previous chapter to include a distinction between the spaces of production and reproduction. The measurement of the city and the judgement of its pathologies establishes a permanent logic of the normal and the pathological – a practice of reform that has unlimited responsibility to observe, respond, intervene, and regulate. The reform of the city is one in which the space of residential life and social reproduction become the object of interest, while work and the production of value remain largely exempt.

In the second part of the chapter I look at the particular nature of sanitary interventions into the city. The developmentality of planning is expressed precisely in a ‘building programme’, the first of which is Edwin Chadwick’s attempt to reform the sewerage system of London. The sewerage engineering of the city is systematic, utilitarian, indirect, and designed for growth. In the latter half of the chapter I show how the house becomes

indexical of the logic of infrastructure, and indeed an infrastructural object itself. The 'byelaw housing' of the late nineteenth century is, *avant la lettre*, an object of urbanism. The chapter ends with a reflection on housing as the paradigmatic shift in the logic of the city, in which the very techniques and concepts that made the city *survivable* also make it reproducible, forming the basis for modern 'urbanism'.

II. The Jurisdictions Of Health

In the 'pathogenesis' of the city, hygiene and medical practice sought a *location* – an origin. The Health of Towns seemed to name both the nature of the problem and its perceived territory – the city as a domain of the sick and the healthy, the normal and the pathological. There is a double move within this geographical sense of the city. First is the expansion in the demarcation of the limits of the city as evident in the work of the Commissioners of Sewers and the ordnance survey maps they produced to complete their work. However, the second and simultaneous move is towards the identification of a specific circumscribed territory of interest within that expanded territory of regulation: the living spaces of the city, and especially those of the poor. This circumscription was not governed strictly by a calculation of economic status but by a physiological notion of health assigned to the space of the city. As the physician and reformer William Guy asks rhetorically, '*are all parts of our large towns equally unhealthy?*'

A single fact will suffice to furnish an answer in the negative to this question. In one of the reports of the Registrar General, the several districts of the metropolis are divided into three groups of ten districts each, under the titles of the *healthiest*, the *medium*, and the *unhealthiest* districts.¹⁶²

By identifying these basic distinctions in the health of the city, sanitary reformers were implicitly or explicitly identifying the political character of their concern. The spaces and bodies of the poor and working classes were

¹⁶² Italics in the original. William A. Guy, M.B., Cantab. *On the Health of Towns, As Influenced by Defective Cleansing and Drainage and on the Application of the Refuse of Towns to Agricultural Purposes* (London: Henry Renshaw, 1846) II.

the biopolitical subjects of the reforming gaze, and were singled out as the aetiological origin of a pathological disturbance. Exemplary of this articulation was the *Report on the Sanitary Conditions of the Labouring Population of Great Britain*, by Edwin Chadwick, otherwise known as The Chadwick Report of 1842.¹⁶³ Bringing together local reports and sanitary statistics regarding the health of towns in Britain, the report was an attack on the physical conditions of the city. As critics noted, the report did not advocate industrial reform, nor did it advocate poor relief in the traditional forms of food or payments. Furthermore, the Chadwick report looked at the conditions of the 'labouring population' primarily *as* a population of city dwellers and not as labourers in the workplace. Sanitary conditions were implicitly defined as those that existed in the territory of the home and in the public thoroughfares of the city.

Mapping these discursive contours soon reveals what is marginalised in the vast literature of sanitary reform: the workplace. The diagramming and description of the city contained in the work of statistical societies clearly reflects this decision. As MJ Cullen argues:

Rather than industrialization it was urbanization which dominated the minds of the statisticians. It was the conviction that upon the urban environment 'so much both of the habits and character of the people depends' which made a survey of the condition of the working classes a *sine qua non* for the more active statistical societies.¹⁶⁴

Social historian Robert Gray has noted that, "The health of towns was to be a more consistent and perhaps less disturbing arena for the reforming energies of medical men."¹⁶⁵ In broad agreement with industry, physicians often saw unemployment as more unhealthy than poor working

¹⁶³ Edwin Chadwick, *Report to Her Majesty's principal secretary of state for the Home Department, from the Poor Law Commissioners on an inquiry into the sanitary condition of the labouring population of Great Britain: with appendices* (London: W Clowes and Sons for H.M.S.O) 1842.

¹⁶⁴ M.J. Cullen, *The Statistical Movement in Early Victorian Britain: The Foundations of Empirical Social Research* (New York: Harvester Press, 1975) 135. [Reference in the text is to: Statistical Society of Manchester, 'Report on the Condition of the Working Classes in the Town of Kingston-upon-Hull', *Journal of the Statistical Society of London*, Vol. 5, No. 2 (Jul., 1842), pp. 213.]

¹⁶⁵ Robert Gray, 'Medical Men, Industrial Labour and the State in Britain, 1830-50' *Social History* 16, no. 1 (January 1, 1991): 27.

conditions.¹⁶⁶ Gray reflects on the writing of James Phillips Kay in particular, noting his distinct parsing of the problem:

Kay tends to separate out the predisposing agencies he lists, and his recurrent focus is on dietary habits, housing and urban environment, and education. While exhaustion from labour is recognized - and Kay's assertion of the exhausting character of the labour of some factory operatives certainly distinguishes him from mere apologists like Ure - concern is displaced from the factory to the town.¹⁶⁷

The inventor (and a founding member of the London Statistical Society) Charles Babbage wrote *On the Economy of Machinery and Manufactures* in 1832, a detailed account of how factory organisation expressed the same principles he himself was putting to work in the design of his calculating machine.¹⁶⁸ As Maxine Berg shows, Babbage saw factory management, machine work, and the machines themselves as templates for the organisation of the whole of society.¹⁶⁹ The factory was organised, enlightened, efficient, and produced cheaper goods with less money. A profitable business could grow, and by employing people it relieved poverty instead of causing it. Berg agrees with Cullen when she writes that the social and sanitary reform movements, typified by the statistical organisations, did not challenge the doctrines of political economy but rather complemented them:¹⁷⁰

The statisticians did not challenge the logic of political economy, nor did they attempt to reformulate the economists' categories which underlay the first questionnaires of the London Statistical Society. Instead, when they took up their social inquiries, they turned aside from the traditional interests of political economy in production, conditions of work and technology, and chose instead to concentrate on the statistics and institutions of the moral development of society.¹⁷¹

We should not interpret this to mean that the economic and the social were artificially separated in the minds of the sanitary reformers. William Farr addressed the issue directly when he wrote on 'The Economic Value of the Population' in the Registrar General's 39th Annual Report of 1877. For

¹⁶⁶ Gray, 'Medical Men, Industrial Labour and the State', 25.

¹⁶⁷ *Ibid.*, 30.

¹⁶⁸ Maxine Berg, *The Machinery Question and the Making of Political Economy, 1815 – 1848* (Cambridge, 1979) 179 – 202.

¹⁶⁹ *Ibid.*, 179-202.

¹⁷⁰ *Ibid.*, 297.

¹⁷¹ *Ibid.*, 302.

instance, Farr maintains that statistics proved that housing density, life expectancy, and the economy were all intrinsically linked by 'a definite law':

The longer men live, and the stronger they are, the more work they can do. Epidemic diseases in rendering life, render wages, insecure. These diseases are most fatal in cities whither the population – to secure all the advantages of the division of labour – have been congregating every year in increased numbers: villages have become populous or have grown into towns; so the population has been growing denser. And that by a definite law, other things being equal, tends to increase weakness, sickness, and mortality.¹⁷²

Chadwick's writing also shows that the population could be linked to the economic question, but only in so far as the notion of economy could itself be considered to be a moral and hygienic concern. Rather than posing the problem in terms of wages, rights, or working conditions, Chadwick saw issues such as the length of life and the distribution of ages as economic concerns for the 'labouring population' – not just in terms of productivity but also in terms of moral temperament. He characterises the older working population as 'intelligent' because they 'perceived that capital, and large capital, was not the means of their depression, but of their steady and abundant support' and that they were 'above the influence of the anarchical fallacies' that influenced the younger workers and their trade unions.¹⁷³ By Chadwick's calculation, the wisdom of experience was becoming scarce, and workers were not living long enough to defuse political tension amongst their members:

The disappearance by premature deaths of the heads of families and the older workmen at such ages as those recorded in the returns of dependent widowhood and orphanage must to some extent practically involve the necessity of supplying the lapse of staid influence amidst a young population by one description or other of precautionary force. On expostulating on other occasions with middle-aged and experienced workmen on the folly as well as the injustice of their trade unions, by which the public peace was compromised by the violences of strike after strike, without regard to the experiences of the suffering from the continued failures of their exertions for objects the attainment of which would have been most injurious to themselves, the workmen of the class remonstrated with invariably disclaimed connexion with the proceedings, and showed that they abstained from attendance at the meetings. The common expression was, they would not attend to be

¹⁷² Originally from the *Registrar- General's 39th Annual Report (1877)*, Reprinted as: William Farr, 'On the Economic Value of the Population' *Population and Development Review*, Vol. 27, No. 3 (Sep., 2001) 570.

¹⁷³ Chadwick, *inquiry into the sanitary condition of the labouring population*, 201.

borne down by 'mere boys,' who were furious, and knew not what they were about.¹⁷⁴

The value of longer life expectancy is to be measured both in terms of the productivity of the labourer as well as the political influence that it might afford in relations between labour and capital. Thus, sanitary reform offered a form of indirect labour management that did not address the workplace, but rather worked on the body by way of the dwelling, the building code, and the water supply. Paolo Virno offers a contemporary interpretation of this in *The Grammar of the Multitude* (2004). Virno refers to Marx in the *Gundrisse* on the issue of labour power, suggesting that what the worker actually offers to capital is the 'potentiality' or 'capacity' of labour and not labour itself. The potentiality of labour power, he suggests, is the essence of what we now call biopower:

The living body becomes an object to be governed not for its intrinsic value, but because it is the substratum of what really matters: labor-power as the aggregate of the most diverse human faculties (the potential for speaking, for thinking, for remembering, for acting, etc.). Life lies at the center of politics when the prize to be won is immaterial (and in itself non-present) labor-power. For this reason, and this reason alone, it is legitimate to talk about 'bio-politics.' The living body which is a concern of the administrative apparatus of the State, is the tangible sign of a yet unrealized potential, the semblance of labor not yet objectified; as Marx says eloquently, of 'labor as subjectivity' The potential for working, bought and sold just like another commodity, is labor not yet objectified, 'labor as subjectivity'. One could say that while money is the universal representation of the value of exchange — or rather of the exchangeability itself of products — life, instead, takes the place of the productive potential, of the invisible dynamos.¹⁷⁵

Virno offers us a post-marxist recapitulation of biopower as a relation between capital and labour that is particularly concerned with the cultivation of life *for* labour. Virno's account is a useful theorisation of how something like sanitary reform put a value on the life of workers even beyond the workplace, but what he seems to leave unexamined is the relationship between this economic dimension of the city and the equally important physiological and hygienic aspects of Chadwick's project, which cannot be dismissed as merely a proxy for capitalist relations. Granted, Virno's

¹⁷⁴ Chadwick, *inquiry into the sanitary condition of the labouring population*, 201.

¹⁷⁵ Paulo Virno, *Grammar of the Multitude* (Los Angeles: Semiotext(e), 2004) 82-83.

theorisation of biopower does not specifically have Chadwick or even nineteenth century Britain specifically in mind, but in this context, we do require a more nuanced definition. In other words, the sanitarian's 'labouring population' is not so easily subsumed under the Marxist category of the 'working class', precisely because it does not adequately describe the object of biopower. Where Virno says that the principle of labour power is the reason 'and this reason alone' that we can use the terminology of biopower, he superficially limits the domain of biopower to a question of the worker in terms of their workplace. Even at the economic level, there are problems with an interpretation that tries to police too strictly the transactions between the factory and the home. As R.E. Pahl wrote:

It is hard for urbanists to escape from the idea that the town is a machine for reproducing labour power and increasing surplus value. [...] This model is no longer satisfactory. The home as a refuelling and refurbishing base for the urban worker where 'he' consumes what 'he' has produced elsewhere is becoming less important conceptually and empirically. Rather, dwellings are centres for the production of goods and services supported by a highly productive technology.¹⁷⁶

This conceptual separation between the workplace and the home, or between the factory and the city, is precisely the boundary that biopower begins to erode. Although it is evident in my preceding descriptions that it is precisely this conceptual split that the sanitarians leverage to rationalise their investigations into the city, it is also the very tools of statistical analysis, the corporal and moral discipline imparted by health reform, and the architectural interventions of civil engineering that extrapolate the rational principles of the workplace *into* the space of the city and the home. The emphasis is not on the home as the reservoir of potential labour power but rather the transactions and permutations of our notions of work and productivity as the sanitary movement turns its attention from the factory towards the city.

¹⁷⁶ R.E. Pahl, 'Concepts in Context: Pursuing the Urban of "Urban" Sociology', in Derek Fraser and Anthony Sutcliffe, *The Pursuit of Urban History* (London: Edward Arnold, 1983) 377.

The Body at Work and at Rest

It is important to note that sanitary investigations did not pass over the factory or the working conditions of the city as a matter of policy, rather, they did not see it as being within the jurisdiction of their discourse. On issues such as factory reform, medical observers were brought in to evaluate working conditions. An early example of this would have been the debate over the ten hours bill in the early 1830s, where physicians were called upon to testify on the medical necessity of a limitation on working hours and child labour. In the Factory Commission's Second Report of 1833, Dr. J.

Williamson of Leeds testifies:

As a philanthropist, I should be glad to abridge as much as possible the time spent in mere mechanical routine, and to give more ample opportunity for intellectual, moral, and religious education; but as a physician I cannot assert that any uniform limitation of hours is essential to the physical health of children.¹⁷⁷

In fact, many sanitary reformers and medical officers actually opposed such reforms on account of the limitation of work and thus profit for already deprived workers whose living conditions might suffer if wages were limited by time. From the perspective of political economy, these were individual choices made by the employer and the employed.

From a biopolitical perspective, the problem was not the limitations of medical theory in the face of political economy but rather an issue that turns on an ambiguous understanding of the limits of the human body. The workplace can be thought of as categorically different from the space of social reproduction, and, in a sense, this split between work and the city – between production and reproduction – can be theorised as a problem of an ambiguous physiology. The body itself was different at work than it was at home. The body at work was understood to be a machine among other machines. The limits of this machine were not clear, and neither medical theory nor political economy could establish such a limit. Even the most philanthropic of industrialists would have agreed with this statement. In 1817, Robert Owen had written an open letter to his fellow industrialists,

¹⁷⁷ Public Record Office, *Reports from Commissioners: Six Volumes (session: 29 January – 29 August 1833)* Vol. 20, 10. Also cited in Gray, 'Medical Men and Industrial Labour', 35.

saying, ‘If then due care as to the state of your inanimate machines can produce such beneficial results, what may not be expected if you devote equal attention to your vital machines, which are far more wonderfully constructed?’¹⁷⁸ Owen mechanises the life of the labourer at the same time that he tries to humanise the sensibilities of the capitalist. Within the logic of the factory, due care, fine-tuning, and repair are general principles that can be regarded as moral values. Or, as Owen says, ‘Give but due reflection to the subject, and you will find that man, even as an instrument for the creation of wealth, may be still greatly improved.’¹⁷⁹

This account appears to be so convincing that even in 1943 the medical historian Henry Sigerist argues that, ‘We overhaul our machines regularly and know that it is more economical to have minor repairs made before they break down completely. Why should we not apply the same principle to human conservation?’¹⁸⁰ The likeness of the human body to the machine made maintenance advisable, but also assumed a certain mechanical naturalism: the human body was designed to work in this way, and should be trained and maintained to work in this way. Although nineteenth century vitalism might contest this interpretation as merely convenient for the factory foreman, it was an idea with deep roots in enlightenment thought. As Francois Jacob observes, ‘mechanism’ was not metaphorical but integral to the idea of the physiological body:

It is often claimed that Harvey contributed to the establishment of mechanism in the living world by comparing the heart to a pump and the circulation to a hydraulic system. Actually this is an inversion of the order of events. In reality it was because it works like a pump that the heart was accessible to study. It was because circulation can be analysed in terms of volumes, flow and speed that Harvey could perform with blood experiments similar to those which Galileo carried out with stones.¹⁸¹

Just as Jacob shows that the pump provided the model for the circulation of blood, we argue that the conditions of labour were themselves

¹⁷⁸ Robert Owen, *A New View of Society*, 1817 (Oxford and New York: Woodstock Books, 1991) 72-73.

¹⁷⁹ *Ibid.*, 76.

¹⁸⁰ Henry Sigerist, *Civilization and Disease* (Chicago: University of Chicago Press, 1943) 54.

¹⁸¹ Jacob, *The Logic of Life*, 34-35.

exemplary for the composition of the body in physiological theory. As Canguilhem points out in respect to the concept of ‘organisation’:

At the beginning of the nineteenth century, a concept imported from political economy, the division of labor, enriched the concept of organism. The first account of this metaphorical transcription is due to the comparative physiologist Henri Milne-Edwards who wrote the article on “Organization” for the *Dictionnaire classique des sciences naturelles* (1827). Since the organism was conceived as a sort of workshop or factory, it was only logical to measure the perfection of living beings in terms of the increasing structural differentiation and functional specialization of their parts, and thus in terms of relative complexity.¹⁸²

‘Organisation’ is crucial in this argument. If the body at work was limited only by the laws of physics and the conditions of political economy, what do we make of the body at home, a body deemed by sanitary inspectors and physicians to be vulnerable flesh, susceptible to poisonous influences both moral and physical, depleted by bad habits and poor living conditions? One might be tempted to make a binary account of the nature of mechanism and organism in nineteenth century medical thought, pitting the iatromechanists against the vitalists. But, as Dominique Guillo has argued, this would embrace a false dichotomy:

It would therefore be profoundly erroneous to see nineteenth-century biology-inspired sociology as an application to social phenomena of the "organism" concept, understood as the antithesis of the machine, or more generally, as a reality that in its essence is not susceptible to the laws of mechanics. To grasp the meaning of what the human sciences borrowed from the life sciences, therefore, we must refocus the investigation on the closely related etymological notion of organization; that is ... what we have when the parts of a whole work to adjust harmoniously to each other.¹⁸³

In this sense, Owen’s ‘vital machines’ posed no logical problem for understanding the physiology of work. The body at home was not organic *as opposed to* the mechanistic body at work. Rather, it was *disorganised*, and required intervention in order to restore it to an organised, mechanically organic whole. The labourer at home was responsible for his dwelling, his

¹⁸² George Canguilhem, *A Vital Rationalist, Selected Writings from Georges Canguilhem*, Edited by François Delaporte, translated by Arthur Goldhammer, (New York: Zone Books, 1994) 84-85.

¹⁸³ Dominique Guillo, ‘Biology-Inspired Sociology of the Nineteenth Century: A Science of Social "Organization"’ *Revue française de sociologie*, Vol. 43, Supplement: An Annual English Selection (2002) 133.

eating and sleeping habits and family life. This is where everything seemed to go wrong. More importantly, this was the realm in which sanitary reform had an opportunity to inculcate a proper organisation, a division of labour and a standard of living comparable to that of the workplace. The impact of work and overwork, poor wages and poor working conditions could all be internalised as pathological norms – accepted sacrifices made by the worker to earn his or her living. Work, production, the factory: these were normative, self-regulating spaces. While the factory system was already governed by its own highly efficient and naturalistic systems of inspection (the foreman, the accountant) the home life of workers were not. A programmatic form of intervention was called for, which would cultivate and organise this space.

The argument was not posed as to whether industrial labour had a pathological effect on life. Rather, the question was, how could the body and the life of the worker be prepared and maintained for the new industrial horizon? And by this we mean not only the workplace but the biopolitical industrialisation of all aspects of everyday life, social reproduction, physical wellbeing and political life. As Babbage had advocated, the observing eye of bourgeois reform sought to extend and develop the rationality of political economy into the city and into the domain of the family. This re-organisation of the population would be characterised by a meticulous concern for the organic anatomopolitics of the body, and an indirect, biopolitical action on the spaces of the city – through sewerage, slum clearance, building codes, and other spatial interventions.

III. Sewerage

Medical technique imitates natural medicinal action (*vis medicatrix naturae*). To imitate is not merely to copy an appearance: but to mimic a tendency and to extend an intimate movement.

– George Canguilhem¹⁸⁴

¹⁸⁴ Canguilhem, *The Normal and the Pathological*, 41.

The city was defined by its organised and disorganised bodies, its normal and pathological spaces. Led by the rhetoric of Chadwick, first as the secretary of the Poor Law Commission and then as head of the Metropolitan Commissioners of Sewers in London, sanitary reform was characterised by an emphasis on ‘the physical circumstances under which the population is placed – as the external and internal condition of their dwellings, drainage, and ventilation.’¹⁸⁵ These physical circumstances were presented in statistical and empirical accounts of the disorganisation and ‘atmospheric impurity’ within the lives of the working population that led to the propagation of miasma throughout the city.¹⁸⁶ For Chadwick and other sanitary reformers, the issue of miasma (and filth, its visible signifier) was one of quantitative variation. In the *Sanitary Report*, Chadwick returns repeatedly to the notion of ‘a system of drainage’ as the main solution to epidemic disease.¹⁸⁷ And just as Broussais’ favoured remedy was the leech, Chadwick’s would be the drain. Whether the problem was airborne, waterborne, or communicated between bodies, the essential problem was an excess of filth, encouraged by poor sewerage. In this way, a whole matrix of social and economic factors could be addressed by a single engineering principle, the ultimate goal of which would be to normalize the environmental condition of the city by efficiently removing its pathological waste.

Chadwick's primary concern in the *Sanitary Report* was to identify and describe this pathological territory of the city. Following this, his recommendations focused on the issue of flushing out obstructions and cleansing districts of miasmatic influences. The idea of drainage as a general technique required that Chadwick become involved in the details of sewerage engineering, advocating for new technical standards and better training for inspectors and engineers. However, as Christopher Hamlin has observed, the emphasis of Chadwick’s discourse in the year immediately following the *Sanitary Report* shifted notably from a concern for individual sites of

¹⁸⁵ Edwin Chadwick, *Report on the Sanitary Condition of the Labouring Population of Great Britain*, edited by M.W. Flinn (Edinburgh: Edinburgh University Press, 1965) 77.

¹⁸⁶ *Ibid.*, 79.

¹⁸⁷ ‘system of drainage’ appears on page 102, 107, 152, and 159 of the 1965 edition. ‘Drainage’ as a term appears more than two hundred times.

sewerage implementation to the idea of a general problem of the city and the flow of sewerage throughout it: 'Chadwick [began] to think in terms of sewage flow rather than sewer capacity and to the evolution of his "arterial-venous" conception of a city in which water constantly moved in, through, and out, removing all water to the country for recycling.'¹⁸⁸ This shift clearly illustrates the biopolitical dimensions of the problem. Sewerage could not be dealt with in one house, one parish or one borough without addressing its relation to other houses, other parishes and boroughs. Like the pathogenesis of miasma itself, sewerage was a system of flows with its own topography, one that needed to be addressed and engineered as a system.

Chadwick's vision of a total engineering solution entailed that every house be connected to a continuous network of piped water sanitation, but as Hamlin notes when he mentions the 'arterial-venous' conception, it foresaw a kind of metabolism by which organic waste could be put to use as fertilizer, just as fresh water would be brought in from outside the city. This system, which Chadwick referred to as 'the separate system', required that street refuse and storm water were drained separately from human waste, summarised with the expression 'the rainfall to the river, and the sewerage to the soil.'¹⁸⁹ Sewerage was conceived as an environmental system that would emulate the physiology of circulation, mapping the body onto the city once again. As Thomas Osborne has suggested, 'the environment has ceased to designate an exterior; the hydraulic city has become a regulated milieu along with the body and the economy.'¹⁹⁰ The explicitness of this model is illustrated in Chadwick's enthusiastic transcription of two speeches entitled 'Circulation or Stagnation' by the reformer F.O. Ward from the Congress of General Hygiene in 1852. Chadwick sees in Ward's lectures an encapsulation of the sanitary vision – 'the cause of humanity at large' – as a medico-

¹⁸⁸ Christopher Hamlin, 'Edwin Chadwick and the Engineers, 1842-1854: Systems and Antisystems in the Pipe-and-Brick Sewers War', *Technology and Culture*, Vol. 33, No. 4 (Oct., 1992), 683.

¹⁸⁹ Edwin Chadwick, *The Health of Nations: A review of the Works of Edwin Chadwick with a Biographical Dissertation by Sir Benjamin Ward Richardson. Volume II* (London: Longmans, Green, and Co., 1887) 256. This theory is also elaborated in the section 'The Separate System of Town Drainage' pg. 204-210.

¹⁹⁰ Osborne, 'Security and Vitality' 114.

engineering practice on the population:

Continuous Circulation is the fundamental principle of English sanitary reformers. According to their theory, the main conveyance of pure water into towns and its distribution into houses, as well as the removal of foul water by drains from the houses and from the streets into fields for agricultural production, should go on without cessation and without stagnation either in the houses or the streets. [...] In the words of this eminent sanitary reformer, "The discovery by the immortal Harvey of the circulation which goes on in the individual body has prepared us for the reception of the strictly analogous and fruitful discovery of the circulation in the social body."¹⁹¹

Chadwick's insistence on a circulatory approach required the introduction of narrow, glazed, descending pipes leading from individual households and transporting waste at high-velocity into large sewer mains.¹⁹² This put him at odds with the orthodox sewerage engineers, who preferred to work with decentralised, local solutions using traditional brick construction.¹⁹³ Despite the apparent logic of Chadwick's vision, his systemic approach was only partially realised in London and other cities for which he was a consultant. In London his plans for city-wide circulatory pipe sewerage was eventually rejected by the Metropolitan Commission of Sewers who favoured 'the combined system', in which all surface and human waste was carried by a single sewerage network, centralised, but non-circulatory. The sewerage infrastructure that was implemented by Frank Forster and Joseph Bazalgette in the 1850s was one of externalization, rather than circulation.¹⁹⁴ By way of pumping stations, Bazalgette was able to design a network of intercepting sewers that pumped waste downstream into the Thames, beyond the limits of the city – a system that is, in principle, still operational today.¹⁹⁵

Nonetheless, Chadwick's concept for the sewerage system represents only the most salient example of an engineered, general systems approach to social and environmental reform, the logic of which can be seen in principle behind all manner of subsequent city services, from the provision of clean

¹⁹¹ Chadwick, *The Health of Nations*, 297-298.

¹⁹² Hamlin, 'Edwin Chadwick and the Engineers', 692.

¹⁹³ *Ibid.*, 682.

¹⁹⁴ Paul Dobraszczyk, *London's Sewers* (Oxford: Shire Publications, 2014) 20.

¹⁹⁵ *Ibid.*, 19-20.

water to the establishment of electricity at the turn of the century.¹⁹⁶ Furthermore, this is not merely a post-rationalisation of our current ‘networked’ infrastructural paradigm. Chadwick himself had clearly grasped the implications when he created the Towns Improvement Company, ‘a for-profit company [organized] to sell cities integrated gas, water, sewerage, and sewage recycling systems.’¹⁹⁷ Chadwick’s associate Benjamin Ward Richardson recounts in the essay ‘Ventilation from Cloudland’ that, ‘One of the latest projects put forward by Mr. Chadwick and published by him in January, 1886, is to draw down air, by machinery, from the upper couches or strata of air and distribute it through great cities, like the Metropolis.’¹⁹⁸ Like Chadwick, Richardson also proposed to drain English cities by way of an extensive system of sewers that would follow national rail infrastructure.¹⁹⁹ These seemingly fanciful concepts were nonetheless logical extensions of the systems approach and were in essence quite similar to actually the existing systems that Chadwick and Richardson superintended.

Utility and Utilitarianism

The provision of sewerage, as well as water, gas, and other services by way of a kind of ‘networked infrastructure’ is exemplary of the indirect, spatial, and generalised strategy of biopower. It was the deployment of spatial engineering as a form of politics. The totality of the population is bracketed into a mass organism with general needs that transcend the particularity of cases. These systems did not rely on the enforcement of a rule or the discipline of an individual body, but rather worked on the collective health by way of ‘general regulations’, or in this case, standardised, city-wide engineering solutions.²⁰⁰ We now regard these systems as ‘utilities’ but rarely think of the political dimension of the term. By approaching the city as a regulated mechanistic system, the logic of the utility also invokes a customer

¹⁹⁶ See: Stephen Graham and Simon Marvin, *Splintering Urbanism, Networked Infrastructures, Technological Mobilities and the Urban Condition* (London: Routledge, 1997) 44-45.

¹⁹⁷ Hamlin, ‘Edwin Chadwick and the Engineers’, 688.

¹⁹⁸ Chadwick, *The Health of Nations*, 316.

¹⁹⁹ James H. Cassedy, ‘Hygeia: A Mid-Victorian Dream of a City of Health’, *Journal of the History of Medicine and Allied Science* (1962) XVII (2): 221.

²⁰⁰ Osborne, ‘Security and Vitality’, 110.

or *user*. Foucault writes that English radicalism was precisely concerned with the ‘problem of utility’, which constantly asked the question, ‘with regard to each of its institutions, old or new... Is it useful? For what is it useful? When does it become harmful?’²⁰¹ Foucault characterises utilitarianism as ‘a technology of government’ that sought a kind of universal applicability.²⁰²

For John Stuart Mill, the particular strength of utilitarianism was in its capacity to adjudicate moral problems where, ‘a person is called on to adopt a standard, or refer morality to any basis on which he has not been accustomed to rest it.’²⁰³ Utilitarianism helps the user to establish the moral quality of a new standard or a new political condition by the objective criterion of its ‘utility’. For Mill, the reforming power of utility was unquestionably extended to the domain of public health:

Even that most intractable of enemies, disease, may be indefinitely reduced in dimensions by good physical and moral education, and proper control of noxious influences...And every advance in that direction relieves us from some, not only on the chances which cut short our own lives, but, what concerns us still more, which deprive us of those in whom our happiness is wrapt up.²⁰⁴

Chadwick's idea of the sewerage system turns the utilitarian maxim into a physical system, attempting to literally materialise the doctrine. Each individual's use of the sewerage system contributes to the greater wellbeing of the city, and the sewerage system itself inculcates sanitary habits wherever it is extended. Chadwick acknowledges this, writing:

I deem it an important principle to be borne in mind, that in the actual condition of the lower classes, conveniences of this description must precede and form the habits. It is in vain to expect of the great majority of them that the disposition, still less the habits, will precede or anticipate and create the conveniences.²⁰⁵

Extending this utilitarian interpretation one step further, we might compare Chadwick's social technology to Bentham's panopticon of 1791, only

²⁰¹ Michel Foucault, *The Birth of Biopolitics: Lectures as the Collège de France 1978-1979* (2010) 40.

²⁰² *Ibid.*, 41.

²⁰³ John Stuart Mill, *The Collected Works of John Stuart Mill, Volume X – Essays on Ethics, Religion, and Society*, edited by John M. Robson (Toronto: University of Toronto Press, London: Routledge and Kegan Paul, 1985) 227.

²⁰⁴ Mill, *Collected Works Volume X*, 216-217.

²⁰⁵ Chadwick, *Report on the Sanitary Condition*, 141.

fifty years before, the title of which could have just as easily described Chadwick's ambitions: *The Commanding Principle: Morals Reformed – health preserved – industry invigorated – instruction diffused – public burdens lightened – economy seated, as it were, upon a rock – all by a simple idea in Architecture.*

In 1867, Benjamin Ward Richardson delivered a lecture in Brighton, which brought this notion of 'a simple idea in architecture' to its logical conclusion, proposing an entire city governed by the principles of sanitary engineering. Subsequently published as *Hygeia: A City of Health*, Richardson claimed to have 'projected a city that shall show the lowest mortality' by way of total engineering systems. He then comments that a village would have been a more pleasing setting but that, 'If cities could be transformed, the rest would follow.' Richardson's city would be built on brick archways, above the ground level: 'So, in other towns there are areas, and kitchens, and servant's offices, there are here subways through which the air flows freely, and down the inclines of which all currents of water are carried away.'²⁰⁶ The principles of 'circulation or stagnation' are fully realised in Hygeia, as are some technologies that are not strictly feasible, such as the chimneys, which, 'arranged after the manner proposed by Mr. Spencer Wells, are all connected with central shafts, into which the smoke is drawn, and, after being passed through a gas furnace to destroy the free carbon, is discharged colourless into the open air.'²⁰⁷ Richardson's utopia gives us a picture of the city as a fetish of engineering expertise – a space of constant movement and salubrity in which the hygiene of the city is literally built into its design and the health of society is reflected in the personal cleanliness of every individual.

Hygeia was, as Foucault said about the plague, the governmental dream of society under fever administration. However, as a synthesis of the 'governmental dream' of the permanent implementation of sanitary reform, it was also understood to be a preventative medicine, and Richardson explicitly spoke of sanitation as a path towards making the very idea of 'cure'

²⁰⁶ Benjamin Ward Richardson, *Hygeia, A City of Health* (London: Macmillan and Co., 1876) 19.

²⁰⁷ Richardson, *Hygeia, A City of Health*, 23-24.

superfluous.²⁰⁸ This is why the hospital, although ostensibly the model upon which such a vision might rest, does not play a central role in Richardson's description. In the serviced urban environment, there is little need for correctional or therapeutic institutions; they have permeated the space of the city in the form of infrastructure. Diseases would be prevented entirely by the watchful eye of hygiene and the preventative architecture of sanitary reform.

But even if sanitary reform dematerialises the hospital and the factory into the form of the city, the institution of the hospital remains a useful typological marker that helps us understand the governmental character of nineteenth century reforms. In his essay 'Security and Vitality: drains, liberalism and power in the nineteenth century' Thomas Osborne points out that sanitary reform finds a kind of genealogical source in the 'medicine of collective spaces' common to the eighteenth century. In some ways paralleling Foucault's typologies of the heterotopia, Osborne describes a number of enclosed spaces of the public sphere – military barracks, hospitals, prisons – where inspections were first implemented, differentiating them from the nineteenth century move towards the inspection of the city itself as a generalised space of concern.²⁰⁹ What Osborne makes clear is that in the move from collective space to the space of the city, a principle of liberal naturalism is introduced: 'Public health sought to free the city in order, so to speak, to leave it properly to itself as a kind of natural space; to exclude all dead matter from the space of the city.'²¹⁰ As we suggested before, this naturalism is ensured by circulation:

What was at stake was not just a Victorian fetish for cleanliness, but a strategy of indirect government; that is, of inducing cleanliness and hence good moral habits not through discipline but simply through the material presence of fast-flowing water in and through each private household.²¹¹

Osborne helps us to understand that the maxim of 'circulation or stagnation' was not just a call to maintain movement of water, air, or people,

²⁰⁸ Chadwick, *The Health of Nations*, 38. Richardson claims to be conveying the words of Chadwick in this passage but provides only his own interpretation of the 'The Clinical Examination of a Sick Town'.

²⁰⁹ Osborne, 'Security and Vitality', 99-121.

²¹⁰ *Ibid.*, 114.

²¹¹ *Ibid.*, 115.

but also a desire to secure and clear the space of the city – quite literally creating the 'level playing field' of political economy as a naturalised concept. Sanitary improvement was an environmental technique that would create the conditions for a more perfectly organized, economical, morally observant population.

This desire to clear the ground and to prepare the population for both work and a higher moral existence is emphasised repeatedly in sanitary literature. A salubrious environment is as necessary for the reproduction of labour as it is for the pursuit of moral and religious ideals. Take, for instance, the Metropolitan Sanitary Association, which described epidemic disease in 1850, 'as effective barriers to the inculcation either of social obligations or of Christian virtues.'²¹² Or the surgeon John Liddle, who wrote that, 'We may depend upon it that neither secular nor religious education can be effectually extended to these lower masses of the people until adequate measures are adopted to improve their sanitary condition.'²¹³ Sanitation and the system of normalization is made to be the foundational practice upon which all other forms of reformation depend. In this sense, British reformers did not *replace* good and evil with scientific positivism, but they *displaced* its privileged role in political judgement.

The logic of this liberal utilitarian paradigm did not compel the population to obey a rule but instead invited them to conform their habits to a new norm, however, the naturalism of sanitary reform was often met by the even more entrenched naturalism of private property. Even when established as an act of parliament, the principles of sanitary reform were difficult to enforce. Referring to the Public Health Act of 1848, the physician Thomas Southwood Smith observed that the act was, 'permissive, not compulsory', and open to local interpretation.²¹⁴ Private companies and landlords were

²¹² Metropolitan Sanitary Association, *First Report of the Metropolitan Sanitary Association* (1850) 7.

²¹³ John Liddle, *On the Moral and Physical Evils Resulting from the Neglect of Sanitary Measures* (n.p., 1847) 5-6.

²¹⁴ Thomas Southwood Smith, M.D. *Results of Sanitary Improvement* (London: Charles Knight, 1854) 3.

reluctant to make improvements at their own expense, and as the physician and former member of the London County Council, Henry Jephson recalls:

...by the middle of the nineteenth century there was no portion of the metropolis into which the mains and pipes of some of the companies had not been carried, yet, as the companies were under no compulsion to supply it to all houses, large numbers of houses, and particularly those of the poorer classes, received no supply. Indeed, in many parts of London there were whole streets in which not a single house had water laid on to the premises.²¹⁵

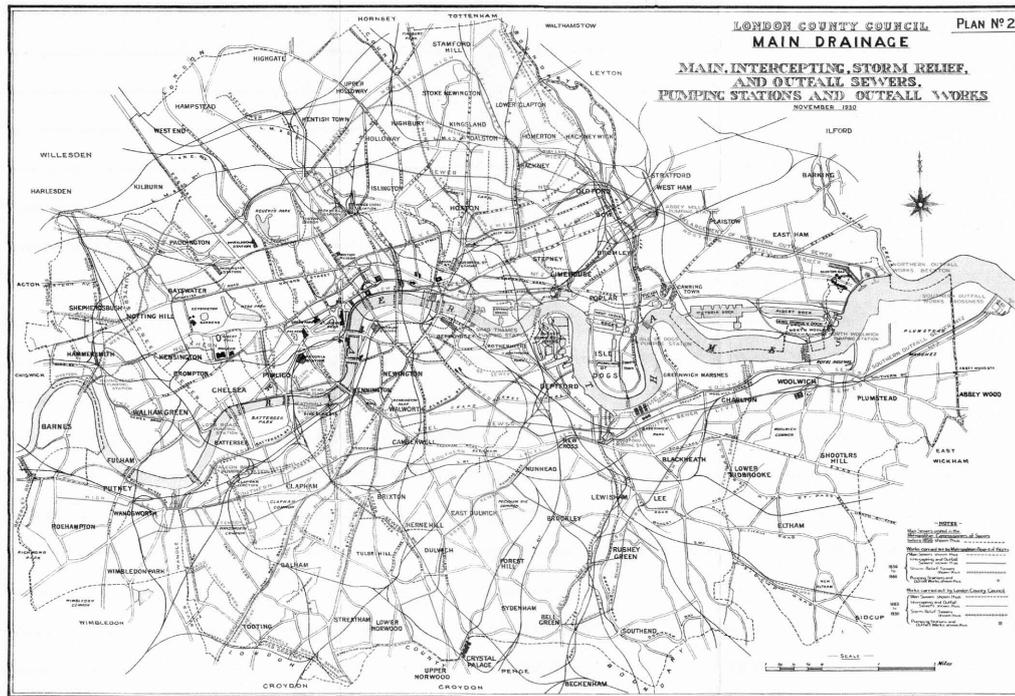


Fig. 8: London County Council 'Main Drainage' map of London showing the extent of the county sewerage network as of 1930.

The project of sanitary reform was governed politically by the same principles that it tried to institute physically and spatially within the city. It was a calculation of quantitative variation – not too much and not too little. Infrastructure would be implemented to cleanse and circulate the bodies and spaces of the population, to create a free space where higher moral objectives might be achieved, but it must balance this against the normative conditions of the economy. As Foucault has described, in answering the question 'is it useful?' government must constantly monitor its own interventions into the social:

An entire domain of possible and necessary interventions appears within the field thus delimited, but these interventions will not necessarily, or not as a general rule, and very often not at all take the

²¹⁵ Jephson, *The Sanitary Evolution of London*, 20-21.

form of rules and regulations. It will be necessary to arouse, to facilitate, and to *laissez faire*, in other words to manage and no longer to control through rules and regulations. The essential objective of this management will be not so much to prevent things as to ensure that the necessary and natural regulations work, or even to create regulations that enable natural regulations to work.²¹⁶

IV. Housing and Urbanism

The extension of governmental regulations into the built environment of the late nineteenth century constantly sought to strike this balance, creating a framework to organise and facilitate healthy dwelling while at the same time not unduly constraining the ‘natural’ course of the property market. As we have seen, these spatial adjustments initially came in the form of water and sewerage, gas lighting and heating, and waste removal. Equally important though, was the regulation of architecture itself. And just as the indirect biopolitics of domestic utilities were introduced through health legislation, so too was building reform pursued through the logic of health. As John Burnett has argued, this is partly because the architecture of the house itself was a health matter, and ‘partly, no doubt, because extensions of sanitary laws were politically an easier way of dealing with housing evils than a frontal attack on the rights of property.’²¹⁷ Housing became a category of sanitary concern that was dealt with at the level of the city. The power that sanitary reform held over the shape of housing by the end of the nineteenth century is evident in regulations that both encouraged certain minimum standards (the normal) as well as identifying buildings and spaces for wholesale demolition (the pathological). Historians of housing in Britain often point to The Artisans' and Labourers' Dwellings Act of 1868 as a notable event in this regard, not because of its prescriptions for improvements to dwellings, but rather for its formal endorsement of slum clearance as a matter of public health.²¹⁸ The act empowered local authorities

²¹⁶ Foucault, *Security, Territory, Population*, 352-353.

²¹⁷ John Burnett, *A Social History of Housing 1815-1985. Second Edition* (London and New York: Methuen, 1986) 158.

²¹⁸ Tarn, *Five Percent Philanthropy*, 73. See also: Burnett's *A Social History of Housing* (note 56)

to demolish properties deemed unsanitary by local Medical Officers of Health, formalising the notion that certain dwellings were beyond repair and beyond adaptation to the emerging technological and health norms created by sanitary reform.²¹⁹

Like previous acts, the 1868 Act was quite permissive and difficult to enforce in practice, but the importance of its provisions were such that it was revisited in Parliament seven years later with the Artisans' and Labourers' Dwellings Improvement Act of 1875, passed the same year as the even more important Act for Consolidating and Amending the Acts relating to Public Health in England, otherwise known as the Public Health Act of 1875.²²⁰ These acts together represented a comprehensive effort by UK reformers to address the material conditions of dwellings, their formal arrangement, and their relationship with the street and infrastructural technologies. Section 157 of the Public Health Act of 1875 in particular gave local authorities power over sewers, including the right to purchase, construct, and repair systems in the public interest.²²¹ The act also compelled landlords and property owners to connect new buildings to the sewer mains and banned the use or construction of cellar dwellings.²²² The number of houses on a street was also constrained by regulations stipulating the width of streets and the amount of space required around the dwellings.²²³ The Public Health Amendment Act of 1890 gave even more detailed control, putting into the hands of local authority prescriptions for the structure of floors, hearths and staircases, while banning the construction of privies and cesspools, which would incidentally reinforce the adoption of the sewerage system.²²⁴

²¹⁹ Tarn, *Five Percent Philanthropy*, 73.

²²⁰ *Ibid.*, 74.

²²¹ Great Britain. *An Act for Consolidating and Amending the Acts relating to Public Health in England. Public Health Act 1875*. Chapter 55. HMSO (11 August, 1875).

²²² *Ibid.*, Section 157.

²²³ The definition of 'house' was also interpreted expansively in this context to include 'schools, also factories and other buildings in which more than twenty persons are employed at one time.' [*Ibid.*, 3.]

²²⁴ Burnett, *Social History of Housing*, 159.

Byelaw Housing

By stipulating new and increasingly enforceable building standards that would require the adoption of new utilities while at the same time prohibiting or condemning instances of sub-standard construction or improper use, the regulations of the late nineteenth century produced a recognisable typology of architecture commonly referred to as 'byelaw housing'. In order to work within the new restrictions, terrace houses and apartment buildings were being visibly shaped by the invisible hand of regulation. The dominance of byelaw construction in the UK at the turn of the century was such that by 1909 the architect and planner Raymond Unwin could write that:

Any one who has been accustomed to building under the various sets of bye-laws which are to be found in different towns is able almost on entering a town to say which of certain bye-laws are in force there, owing to the influence they have on the buildings. Indeed, the abrupt and arbitrary manner in which some of these regulations work has produced a type which is practically bye-law architecture.²²⁵

Byelaw architecture employed the logic of the minimum standard to produce a narrow range of variations – an architecture of economic and political constraint. Byelaw housing was a negatively defined procedure that did not prevent the growth of the city, but attenuated its worst habits and provided new norms by which free enterprise could proceed. Housing charities, for instance, often practiced what J.N. Tarn referred to as 'five per cent philanthropy', whereby new building initiatives for the poor aimed to meet basic health requirements while also ensuring a profit of around five per cent on rents. For the charity to make a profit was seen as a way of maintaining economic health, along with physical health. The dividend was thus a form of hygiene. However, unlike B.W. Richardson's glorious vision of *Hygeia*, the outcome of the byelaw system was hygienically sound but distinctly lacking in aesthetic appeal. In agreement with Unwin's sentiments,

²²⁵ Raymond Unwin, *Town Planning in Practice: an Introduction to the Art of Designing Cities and Suburbs*, 3rd edition (London: T. Fisher Unwin Ltd., 1919) 386. He continues: "The builder is compelled to conform to it, and in seeking to secure the upmost which the bye-laws will allow him, he pushes his building, as it were, against an unbending line or plane. His building becomes moulded by this, and from this moulding springs what I have called "bye-law architecture". [*Ibid.*, 386-387.]

the historian William Ashworth wrote, ‘The streets of this time were monotonous, but the monotony of order was an advance on the earlier monotony of chaos.’²²⁶

The By-law Method of Development.



CHARACTERISTIC STREET OF ARTIZAN HOMES IN INDUSTRIAL TOWNS AND CITIES.



BACKS OF ARTIZAN HOMES.

of

Fig. 9: ‘The By-law Method Development.’ from Raymond Unwin’s *Nothing Gained By Overcrowding!* (1912)

Although critics lamented the aesthetic effect of byelaws, M.J. Daunton points out that the byelaw system fundamentally changed the orientation of the house in the city, turning it inward upon itself as a private unit, while also making the street a domain exclusively for public and commercial activity.²²⁷ This was made possible by the public health acts and their promotion of bringing the basic utilities of water, gas, and sanitation into individual dwellings. As Burnett observed, sanitary improvements changed both the layout and use of domestic space:

²²⁶ Ashworth, *The Genesis of Modern British Town Planning*, 91. [also quoted in M.J. Daunton, *House and Home in the Victorian City: Working-Class Housing 1850–1914* (London: Edward Arnold, 1983) 8.]

²²⁷ Daunton, *House and Home in the Victorian City*, 11.

By the end of the century the spread of water-borne sanitation was allowing the closet to be incorporated into the building of new houses, usually as part of the scullery annexe, with even more privacy and convenience for its users. This development made possible major modifications of the first-floor plan, with additional space for a third bedroom and, even, at the top end of the working-class scale, a bathroom.²²⁸

Gas for lighting and cooking became available even to the poor through the penny-in-the-slot system, pioneered in Liverpool in the 1890s. Daunton notes that once the invention was introduced in London, the number of meters 'rose from 439 at the end of 1892, to 80,115 at the end of 1898.'²²⁹ Civil engineering and architecture are posed as the provision of a health service, underwriting the sanctity of the private home. The dwelling was opened up to public utilities, standardising national and local codes of behaviour yet simultaneously facilitating a deepening of the privacy of the home. This process illustrates how a biopolitical advance of technology can also serve anatomopolitical goals, providing the basis for self-care and individual responsibility within the city, where, as Daunton describes, 'each house turned in upon itself as its own private world. Its facilities were not to be shared with its neighbours, the space assigned to it was not to be part of the common property of a group of houses. Instead each house was to be rigidly encapsulated.'²³⁰

As I have already suggested, the implications of this encapsulation were both social and technical. The engineer David Boswell Reid, a pioneer of interior air ventilation, captured the conceptual shift brought about by these changes when he wrote that 'the great and primary object of architecture is to afford the power of sustaining an artificial atmosphere.'²³¹ Robert Bruegmann has shown how Reid embraced a discourse of health similar to F.O. Ward's 'circulation or stagnation' by arguing 'persuasively that heating and

²²⁸ Burnett, *Social History of Housing*, 161.

²²⁹ Daunton, *House and Home in the Victorian City*, 238-239.

²³⁰ *Ibid.*, 12.

²³¹ David Boswell Reid, *Illustrations of the Theory and Practice of Ventilation, with Remarks on Warming, Exclusive Lighting, and the Communication of Sound* (London: Longman, Brown, Green & Longmans, 1844) 71. Also quoted in Robert Bruegmann, 'Central Heating and Forced Ventilation: Origins and Effects on Architectural Design', *Journal of the Society of Architectural Historians*, Vol.37, No.3 (October, 1978) 160.

ventilation affected the health of the building's occupants and was, therefore, more important than any other aspect of design.²³² Although Reid's notion of 'atmosphere' was specifically concerned with the circulation of air, one can see how the same logic could apply to gas lighting and heating, as well as sanitation, and later, electricity. Housing became the typological structure through which atmospheric controls were secured and arranged. As Reid wrote: '...the visible structure is only the shell or body of that interior atmosphere without which existence could not be supported.'²³³ Through the engineer's spatial logic we begin to see the significance of the category of 'housing' for the late nineteenth century. The house was no longer a singular architectural expression or space of dwelling, it was the instantiation of a standardized and internally organised technical object – an architectural unit of infrastructure.²³⁴ The technical and regulatory apparatus, of which byelaw housing is only a useful and largely overlooked marker, realised a set of new spatial norms: we have gone from Quetelet's *l'homme moyen* to *l'habitation moyenne*, and ultimately, to *la ville moyenne*.

Through this techno-hygienic normalisation, architecture and engineering began to conjure an artificially sustainable human environment for the city, but one that was increasingly independent of the limitations and pathologies of local conditions. Housing, as an organisational system containing different utilities and domestic activities of social reproduction, came to resemble, at least conceptually, the hygienic, rational, and machinic space of the factory imagined by Babbage in the first decades of the century. The factory and the home shared a common language of spatial conditioning attuned to the performance of the body. The geographer Matthew Gandy has described this as a 'nexus of hybridized relations between the body, nature and urban space, so that the structure of the city tends towards a cyborgian

²³² Bruegmann, 'Central Heating and Forced Ventilation', 153.

²³³ Reid, *Illustrations*, 71. Also quoted in Bruegmann, 'Central Heating and Forced Ventilation', 160.

²³⁴ Here, housing can also be understood by its tertiary definition, as a protective covering – a material that houses (the poor, pipes and utilities – units of production and reproduction of the social). "housing, n.1". OED Online. December 2014. Oxford University Press. <http://www.oed.com/view/Entry/88956?rskey=mj2P8M&result=1> (accessed March 03, 2015). Definition 2b and/or 6a.

synthesis between the physiological needs of the human body and the physical infrastructure of the city.’²³⁵ With the entrance of biopower into the physical infrastructure of the city and into the formal qualities of the building, developmentality becomes even more central to the governance of the city. Reform is no longer limited to simply identifying and measuring pathological qualities in the city; it is now equipped – through legislation, professionalization, and technological means – to control and supervise growth. The growth of the city, which was once perceived as a vector of disease in and of itself is now sanctioned and developed through the requirements of health.

With the byelaw system and its material effects, we should consider the epistemic shift that has taken place in the notion of the city, and indeed the production of the *urban*. The statistical and physiological discourse on the city in nineteenth century public health created the basis for a system of formal, behavioural, and legal interventions responding to the crisis of the city, but in this response, we find a transformation of the nature of domestic architecture and its relationship to the city. In this sense, the generalisation of public health in the form of architecture and engineering changed the very definition of *growth* when we talk about the city. Of course, this was part of the project from the very beginning – to change the pattern and the process by which cities grow, and to shape this process in the image of a developmental body politic.

So what exactly do we mean when we say the urban and not the city? I introduce the urban here as a specific category, distinct from the city in the sense that the urban represents a process or assemblage of techniques that constantly reproduce a topology of the normal, rather than a coherent representational form. In other words, the urban is the production of a serviced environment rather than an architectural edifice. Henri Lefebvre has described the urban as a totalising event, one particular to industrial society, which he calls a ‘process of domination’ over other forms, such as nature, or

²³⁵ Matthew Gandy, ‘Zones of Indistinction: Bio-political Contestations in the Urban Arena’, *Cultural Geographies* (2006) 13: 504.

the rural.²³⁶ In *The Urban Revolution* (1970) he emphasises the projective character of the urban, drawing attention to its status as a ‘praxis’: ‘We can assume the existence of a *virtual object*, urban society; that is, a *possible object*, whose growth and development can be analysed in relation to a process and a praxis (practical activity).’²³⁷ For Lefebvre, the urban is potentially endless, and the logic of its growth and development is the total urbanisation of the globe. It is only from this hypothetical limit that we can work backwards, to understand both its process and its meaning in contemporary society. But even if Lefebvre’s theorisation offers a compelling thought experiment for beginning to conceptualise the future totality of urban society, his writing is less clear when it comes to articulating the material applications and epistemological reasoning behind the urban condition that I am addressing here.

More useful perhaps is work that has been pursued in architectural history, mainly through the re-examination of the writings of Ildefonso Cerdá from the 1860s and his theorisation of *urbanización*.²³⁸ Françoise Choay has been credited with the rehabilitation of Cerdá in architectural discourse, and her book *The Rule and the Model* (1980) is notable for underlining the importance of Cerdá’s theories, as much as the historical significance of his plans for nineteenth century Barcelona.²³⁹ On the notion of *urbanización*, Choay explains:

Cerdá gives it a functional definition, the first of its kind: urbanization resides in nothing other than the relation between rest and movement, or rather between the spaces that accommodate human repose and those that facilitate movement, that is, buildings and the network of streets. By thus reducing the process of spatial organisation to the combination of spaces destined for habitation and channels of communication, Cerdá formulates for the first time the two basic

²³⁶ Henri Lefebvre, *The Urban Revolution*, translated by Roberto Bononno (Minneapolis: University of Minnesota Press, 2003) 2-3.

²³⁷ *Ibid.*, 3.

²³⁸ In addition to the references cited here, a recent and comprehensive treatment of Cerdá’s theory of the urban can be found in: Ross Exo Adams, *To Fill the Earth: Circulation and Urbanization*. MPhil thesis, Birkbeck, University of London, 2014.

²³⁹ Françoise Choay, *The Rule and the Model* (Cambridge, MA: MIT Press) 1997.

concepts that remain today the operative poles of urbanism: habitation and circulation.²⁴⁰

Habitation and circulation: two activities that define the ‘operative poles of urbanism’. Choay describes Cerdá’s theory of the urban in a manner that is strikingly similar to the interpretations provided by Chadwick, Ward, and Richardson in the 1850s and 60s. Again, this activity is not enabled by an immanent architectural principle but by the political consensus and the technological means through which the urban propagates ‘spatial organisation’. Where the sanitary reformers of Britain trained their attention on the subterranean and infrastructural objects of atmospheric regulation, Cerdá emphasises residential block formation and the street plan as a primary organisational matrix.

This general agreement between British reform and Spanish *urbanización* is relatively uncontroversial. But in order to get at the semantic implications of the urban, we should turn briefly to Pier Vittorio Aureli’s account of Cerdá in the first chapter of *The Possibility of an Absolute Architecture* (2011).²⁴¹ Emphasising the etymological distinctions in Cerdá’s theorisation of *urbanización*, Aureli highlights his decision to construct the neologism from the Latin *urbs*, which Aureli insists is a decisively apolitical formation. He critiques this as a term that merely denotes an aggregate of houses in Roman law: ‘*urbs* came to designate a universal and generic condition of cohabitation’, in distinct contrast to the political implications of the Spanish *ciudad*, which is derived from *civitas* (‘the condition of citizenship or the right to citizenship’).²⁴² Aureli essentially argues that *urbanización*, denoting settlement without politics, amounts to the mass generalisation of a ‘generic condition of cohabitation’ ruled only by the logic of the household economy, which it endlessly reproduces:

Urbanization is here understood according to Ildefons Cerdà's initial use of the term as the ever-expanding and all-encompassing apparatus that is at the basis of modern forms of governance. These modern forms of governance consist in the absorption of the political

²⁴⁰ *Ibid.*, 237.

²⁴¹ Pier Vittorio Aureli, ‘Toward the Archipelago, Defining the Political and the Formal in Architecture’, in *The Possibility of an Absolute Architecture* (Cambridge, MA: MIT Press, 2011) 1-46.

²⁴² *Ibid.*, 6.

dimension of coexistence (the city) within the economic logic of social management (urbanization).²⁴³

Although Aureli's analysis grounds our notion of the urban in a political etymology that helps to highlight the normative motivations of urbanism as a strategy of governance, his own political critique is informed by an economistic analysis that, like Virno, tends to obscure as much as it reveals. For, while we gain a semantic clarity for the urban by returning to Cerdà via Greek and Latin philology, we also find that Aureli's interpretation of the urban is identical to Virno's assessment of biopower: they are both merely the means for maintaining Marx's notion of labour power: 'As exemplified in Cerdà's plan for Barcelona, urbanisation has no representative or iconic function. It is simply a device – it *is* what it *does*: it creates the best conditions for the reproduction of the labor force.'²⁴⁴ The same problem then arises for Aureli as it does for Virno: how to explain the *biopolitics* of a phenomenon that is supposedly apolitical or post-political? How to account for the 'home economics' that occurs *within* the urban, and especially the extra-, and non-economic forms of power exercised through the inculcation of a biological and medical program through the built environment – a program that is consistent with the principles of political economy but by no means reducible to it? Developmentality is precisely opposed to such a narrow, functional definition of the urban, and seeks to govern on a different basis.

Conclusion

As I have tried to show in this chapter, governmental regulation and infrastructural technology are increasingly programmatic and typological in the British city of the nineteenth century. Beginning with the utilitarian intervention into the sewerage system, regulation of the city takes place not to prevent growth, but precisely to allow it continue *developmentally* – to produce a serviced and normative environment for the maintenance of the population. With the proliferation of regulation and engineering, the notion of standard

²⁴³ *Ibid.*, x. Aureli also opts for the Catalanian spelling of 'Ildefons Cerdà', rather than the Spanish.

²⁴⁴ Aureli, 'Toward the Archipelago', II.

operations and permanent routines begin to typify the biopolitical management of the city. As I pursue this line of inquiry, the developmentality of the urban demands to be examined as more than a simple transactional space of economic circulation, but as the cultivation of a constantly attentive, hygienic environmental system. What is important going forward is that these normative techniques begin to form an ensemble of developmentality that looks more and more like a building program. The sanitary reformers, architects, and engineers concerned with the question of the city in the last decades of the nineteenth century no longer regarded the city strictly as a pathogenic phenomenon. Rather, they began to investigate the means by which they might therapeutically construct, and ultimately normalise the procedures of growth. Indeed, the new question was, *what is normal urbanisation?* In the following chapter I will show how this ensemble of techniques begin to be reformulated and recast as the building blocks of a new idea of the city *against* the urban, or, the Garden City.

5. TECHNOLOGY OF HEALTH

I. Introduction

I ended the last chapter with a question: What is normal urbanization? It was a question asked repeatedly in the last decades of the nineteenth century when the problem of housing reform, overcrowding, or public health was raised; how should urbanism proceed, and how should it be governed, both politically and formally?

Byelaws, inspection, statistical analysis and civil engineering defined a certain conjuncture of developmentality – an ensemble of spatialisations that served in the maintenance of urban growth. What became evident, however, was that this ensemble was limited to a permanently reactionary state, in which developmentality governed the preservation and elaboration of the normal within perpetually pathological conditions. In this chapter I will turn to a different moment, and a different set of spatialisations, in which a more overtly positivist iteration of developmentality emerges within the discourse on the city.

At the turn of the twentieth century, the idea of the ‘Garden City’ is presented as a potential response to urbanisation that appears to be categorically different from previous attempts to deal with the issue. The Garden City was, like its utilitarian predecessors, an ‘idea in architecture’, one that sought to control, segment, decentralise, and re-organise urbanism in the image of the traditional British town. However, unlike previous interventions, the Garden City did not configure or appropriate an individual system within the existing city as the basis for reform (such as institutional spaces, sewerage, or housing reform). Rather, it took the city itself as its conceptual unit. The solution proposed by the Garden City is distinct: the town is no longer a site that must be merely revealed, understood, and managed, it is now a complete apparatus that can be synthesised – a kind of hygienic technology. The garden city concept would, once and for all, attempt to normalise the urban through a synthesis of ideas in physical planning.

This chapter will examine the discursive context of the Garden City and its relation to the emergence of town planning as a specific practice in the first decades of the twentieth century.

By most accounts, British town planning *begins*, either with Ebenezer Howard's description of the Garden City in *To-morrow: A Peaceful Path to Real Reform* in 1898, or with the establishment of the 1909 Town Planning Act, both of which signal an explicit discourse on the institutionalisation of planning practice.²⁴⁵ As I have tried to show in preceding chapters, the conceptual framework of town planning is first postulated in the fields that directly engage with the crisis of the city (epidemiology, statistics, and civil engineering) many decades before. Nonetheless, the significance of the Garden City inheres in its insistence on a new figure – the town planner – and a unique synthesis of the city as a designed object of infrastructure. The Garden City reintroduced the idea of physical master planning, not as the will of a sovereign or an enlightenment project of geometry and representation, but as a strategy of collective social reform. Urban design, which finds a comprehensive form in the Garden City, showed that the infrastructural technologies of health reform could be put to work – to address the *crisis* of the city with an *idea* of the city. Rather than a utility, a housing policy, or a philanthropic settlement, the Garden City presented the town as a unit of reform – an invention as such.

In the first part of this chapter, we will consider the conceptual genealogy of the Garden City and its relationship with other precedents in physical planning in the nineteenth century. Important to this analysis will be the establishment of a conceptual link between the political and the spatial objectives of British social reform. The second part of the chapter will look at the formal qualities of the Garden City and its relation to the logic of developmentality. The distribution of the population, the regulation of environmental conditions, and the physical representations of organic laws all have a distinctive expression in the garden city idea. In the final part of the chapter we turn to the emergence of town planning discourse out of the

²⁴⁵ Ebenezer Howard, *To-morrow*, 1898.

garden city idea and the contradictions that emerge within it. We will see that it is ultimately disaggregated, reintegrated into the more general repertoire of the urban, but out of this shift we also see the emergence of a broad discursive platform for town planning as a professional, regulatory and design practice, independent of the departmental concerns of building code, architecture, or engineering.

II. The City as Invention and Experiment

Ebenezer Howard is widely held to have been a visionary in the conceptualisation of modern planning. The urban historian Peter Hall has written that Ebenezer Howard is the ‘most important single character’ in his historiography of town planning.²⁴⁶ Lewis Mumford, in his preface to the third edition of Howard’s only book, goes further, comparing Howard’s idea of the Garden City to the invention of the aeroplane: ‘At the beginning of the twentieth century two great new inventions took form before our eyes: the aeroplane and the Garden City, both harbingers of a new age: the first gave man wings and the second promised him a better dwelling-place when he came down to earth.’²⁴⁷ Although this chapter will take a more critical view of the Garden City’s legacy, its conceptual and political impact provides an important configuration of developmental planning thought. In the following sections, we will attempt to reconstruct some of the main conceptual elements of Howard’s contribution. However, what should also become clear is that although Howard ‘invented’ the Garden City, he did not single-handedly invent town planning as a professional, governmental, and architectural activity. Through the Garden City he *re-invents* the city, in a manner of speaking, as an instrument of social reform. It is this status of the city *as* invention that we turn to first.

²⁴⁶ Peter Hall, *Cities of Tomorrow, third edition* (Oxford: Blackwell, 2002) 88.

²⁴⁷ Lewis Mumford, preface to 1946 edition of Ebenezer Howard, *Garden Cities of Tomorrow* (London: Faber and Faber, 1946) 29.

The Problem of Growth, Restated

There is, however, one question in regard to which one can scarcely find any difference of opinion. It is well-nigh universally agreed by men of all parties, not only in England, but all over Europe and America and our colonies, that it is deeply to be deplored that the people should continue to stream into the already over-crowded cities, and should thus further deplete the country districts.²⁴⁸

Here, in 1898, in the opening pages of *To-Morrow: A Peaceful Path to Real Reform*, Ebenezer Howard restates the basic problem of the city in familiar terms. At the turn of the twentieth century, British cities, although increasingly rationalised by the matrix of urban reforms, were still seen to pose a biopolitical problem for society and its built environment.²⁴⁹ In the search for the adequate ‘norms and forms’ of urbanisation, a consensus emerged at the turn of the century that existing housing regulation was insufficient – and, that *housing* as such was not an adequate framework within which to address the crisis of the city. Most importantly, the byelaw system was mainly a set of prohibitions and regulations – a ban on pathological spaces – and provided mainly a negative image of the normative community. The building regulations, supported by sanitary reforms and the networking of urban infrastructure, far from a solution to the problems of the city, were seen to be merely prolonging a pernicious condition with an ‘arid policy of health pursued in a short-sighted, inelastic way’, as the planner Patrick Abercrombie put it.²⁵⁰ To simply respond to the conditions of urbanisation, to modulate its quasi-natural elaboration through the mechanisms of byelaws did not appear adequate to the production of the desired hygienic, productive society. ‘Real Reform’ it seems, required more than the public health acts. Howard and his advocates called for a new

²⁴⁸ Howard, *To-morrow*, 2-3.

²⁴⁹ As Stanley Buder highlights in his book, *Visionaries and Planners*: ‘Over 70% of England and Wales was urban in 1898’. [Stanley Buder, *Visionaries and Planners: The Garden City Movement and the Modern Community* (Oxford: Oxford University Press, 1990) 68.] This statistic was probably gathered from Adna Ferrin Weber, whom Buder subsequently quotes: ‘the dramatic increase in the numbers and size of Great Cities was the most remarkable social phenomenon of the present century.’ [*Ibid.*, 69]

²⁵⁰ Patrick Abercrombie, ‘Study Before Town Planning’, *The Town Planning Review*, Vol. 6, No. 3 (Jan., 1916) 177.

standard of design and social reform that would manage growth through an even more ambitious programme.

What Howard captured in *To-Morrow* and its subsequent iteration, *Garden Cities of Tomorrow*, was a synthesis of wide-ranging ideas on both the persistent inadequacy of the nineteenth century city and the possibilities of a new form – a new city that would come to replace it. The conventional commentary on garden cities tend to reiterate Howard’s own account, following his own reasoning that the idea was a catalyst since, like any good invention, it had the right formula. As Howard puts it:

Shortly stated, my scheme is a combination of three distinct projects which have, I think, never been united before. These are (1), the proposals for an organised migratory movement of population of Wakefield and of Professor Marshall; (2), the system of land tenure first proposed by Thos. Spence and afterwards (though with an important modification) by Mr. Herbert Spencer; and, (3), the model city (of somewhat different design, however) of Jas. S. Buckingham.²⁵¹

Such a synthesis would achieve the best of both city and country, combined with providential design to form the Garden City.²⁵² This would not only be based on the social and political ideas of many different thinkers, but also a fundamentally scientific approach to society. At the top of chapter six, on ‘Administration’, Howard includes an epigraph quoting the reformer Albert Shaw:

The so-called problems of the modern city are but the various phases of the one main question, How can the environment be most perfectly adapted to the welfare of urban populations? And science can meet and answer every one of these problems. The science of the modern city – of the ordering of the common concerns in dense population groups – draws upon many branches of theoretical and practical knowledge. It includes administrative science, statistical science, engineering and technological science, sanitary science, and educational, social and moral science.²⁵³

²⁵¹ Howard, *To-morrow*, 103.

²⁵² The most obvious reason that historians quote the same range of influences on Howard is due to the fact that Howard presents them all in his own book. The elements of the synthesis are all quotes in large extracts throughout the text.

²⁵³ Albert Shaw, ‘Municipal Government in Great Britain’ (London: T. Fisher Unwin) 3. quoted in: Howard, *To-morrow*, 63. My transcription of the quote is abridged.

Quotations, references, and descriptions are woven into the text of *To-Morrow* to give the impression that Howard's work is a 'key' or code that, in its unique combination, will give access to a new social horizon.²⁵⁴ However, such a view of the work puts the emphasis on the reader's effort to follow Howard's elaborate synthesis, and to decode or deconstruct the 'formula' and indeed the genius of Howard himself along the way. However, I argue that what this seems to ignore is that the importance of the Garden City is not the 'synthesis' that Howard presents. Rather, I would suggest that its originality is to be found in the rationale it provides for the reintroduction of master planning 'after urbanism' as a way to regulate growth and to foster the biopolitical community. The key, so to speak, is that Howard's book – and the discourse that it produced – argued at the scale of the city itself. New towns, as opposed to regulations that might re-shape existing urban areas, or the technical upgrading or renovation of urban space with further utilities brought to public light the notion of the city as a unit of infrastructure in and of itself. One might say that the notion of the city as an invention is only possible at this point because of its technical status as an assemblage of infrastructural elements. The 'raw materials' of the city are now in some sense available for reinvention.

Utopia

This interpretation, which intentionally draws attention to the question of the built environment, diverges from the other conventional analysis, in which the primary contribution of the Garden City is its rhetorical power within a utopian canon of literature. David Pinder, Robert Fishman, and others have characterised the Garden City (and Howard in particular) as utopian, but this is hardly the point.²⁵⁵ Granted, Howard's *To-Morrow* makes particular citation of B.W. Richardson's *Hygeia* in an epigraph to chapter two, and Edward Bellamy's literary utopia *Looking Backwards* influenced Howard

²⁵⁴ There is literally a 'Master Key' diagram in earlier drafts [reproduced in: Buder, *Visionaries and Planners*, 108.]

²⁵⁵ Pinder, *Visions of the City, City: Utopianism, Power and Politics in Twentieth-Century Urbanism* (New York: Routledge) 2005; Robert Fishman, *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, Le Corbusier* (Cambridge, MA: MIT Press) 1982.

in the years before his development of the garden city idea. Much like *Hygeia*, Howard's vision was one in which the ideal of health is a fundamental organising principle, rather than a potential goal of the city.²⁵⁶ But unlike *Hygeia*, the Garden City is not presented as a rhetorical literary critique. Likewise, Howard is not writing another *Looking Backwards*. Edward Bellamy wrote a utopia, Howard wrote a planning proposal – at the very least a work of explicit propaganda. The book presents what Howard refers to as an experiment, and not a utopia, one that was 'practicable, here and now, and that on principles that are the very soundest, whether viewed from the ethical or the economic standpoint.'²⁵⁷

The City as Factory, Colony, or Garden

Just as it resists the utopian categorisation, the Garden City is also ill suited to its characterisation as an unprecedented work of genius. As Howard is quick to explain, the garden city synthesis emerged from a number of existing projects in economics, architecture, and social planning, some of which included model towns and villages. Even the idea of the master-plan has its origins in earlier proposals, but these were largely ideas that were limited to a specific scope, either industrial or philanthropic, and did not have the character of a general urban project. In some of these projects we find the genealogy of certain concepts that are fundamental to later town planning doctrine.

The first concept is that of a constitutive link between work and the spatial conditions of life found in Robert Owen's projects and writings in the early nineteenth century.²⁵⁸ I have already noted in the previous chapter that Owen's idea of the worker's body was that it should be maintained to the same standards as other types of industrial capital. To this end, Owen is famous for having established such services as schooling and housing, along

²⁵⁶ Howard, *To-Morrow*, 20.

²⁵⁷ Howard, *To-Morrow*, 10. He also describes the project as 'an experiment which is designed for humanity at large.' (page 19)

²⁵⁸ Widely held to be the founder of modern British socialism, the literature on Owen and his New Lanark cotton mills is extensive. Suffice to say that most histories of the Garden City also include a mention of Owen, drawing broadly agreeable connections between the two thinkers.

with regulated work hours, employment security, and other social benefits. Owen referred to his initial practices at New Lanark as a form of 'government' rather than factory management.²⁵⁹ Owen's government, philanthropic in character, was also a pedagogic and hygienic programme. The government of bodies was also the government of minds, habits, knowledge, and relations. These too had a kind of shop floor, extended to the scale of settlement, expanding the reach of technocratic management.

Owen's practices at New Lanark, at first astonishing to the industrial community as well as the general public, began to take on the character of a common consensus by the latter half of the century, when it became commonplace for large industrial enterprises to recognise the social, as well as the economic value of housing and other provisions. As Edwin Chadwick observes forty years after Owen, there is even a utilitarian logic to the scheme:

When, however, a manufactory has been once established and brought into systematic operation, when the first uncertainties have been overcome and the employer has time to look about him, there appears to be no position from which so extensive and certain a beneficial influence may be exercised as that of the capitalist who stands in the double relation of landlord and employer. He will find that whilst an unhealthy and vicious population is an expensive as well as a dangerous one, all improvements in the condition of the population have their compensation.²⁶⁰

Development and Trusteeship

Implicit in this line of thinking was the principle that more than simple industrial production was needed to maintain both industry and the society that produced it. This notion can be expressed in the terms of August Comte, who saw an important distinction between 'progress' and 'development'. Confronted with the hypothetical possibility of 'unlimited progress', Comte pointed out that:

...so far from improving our condition, it would be a bar to all development, whether social or individual. The true path of human progress lies in the

²⁵⁹ Robert Owen, *The Life of Robert Owen, Written by Himself, With Selections from his Writings and Correspondence, Volume I* (London: Effingham Wilson, 1857) 56-57.

²⁶⁰ Chadwick, *Report on the Sanitary Condition of the Labouring Population*, 300.

opposite direction; in diminishing the vacillation, inconsistency, and discordance of our designs by furnishing external motives for those operations of our intellectual, moral, and practical powers, of which the original source was purely internal.²⁶¹

Development (or, 'true progress') for Comte was an idea that could act as an important corrective, keeping progress within the bounds of a gradual human improvement.²⁶² As Michael Cowen and Robert W. Shenton have suggested, Comte's positivist theory of development 'permits the capacity for improvement to be balanced against variations of the normal state of humanity and development is the fulcrum of the balance.'²⁶³ Comte's theory assumes an epistemological progression of stages within human knowledge, with the ultimate stage of knowledge being a scientific society. This provides, as Armand Mattelart points out, the teleology for development:

The history of an organized system becomes the successive stages it had gone through or the series of transformations by which the system was progressively formed. Thus all ingredients were assembled to produce a theory about the history of human societies as a process of development.²⁶⁴

John Stuart Mill agreed with Comte that humanity 'looked at as a comprehensive whole, does exhibit a determinate course, a certain order of development...' the science of which would to be found in biology.²⁶⁵ Mill also observed that Comte's notion of development contained a general principle or standard of morality that guided the scientific mind.²⁶⁶ Comte himself would describe this with a neologism: 'altruism'. In the *System of Positive Polity* (1851), Comte described altruism as the opposite of 'egoism': 'In a word, Biocracy and Sociocracy will be alike pervaded by Altruism; whereas during the long period of theological and military training Egoism

²⁶¹ Comte, *System of Positive Polity*, 22.

²⁶² Cowen and Shenton, *Doctrines of Development* (London: Routledge, 1996)

²⁶³ *Ibid.*, 31.

²⁶⁴ Mattelart, *The Invention of Communication*, 67.

²⁶⁵ Mill, *August Comte and Positivism*, 85.

²⁶⁶ *Ibid.*, 100.

predominated.²⁶⁷ Comte puts biology in the service of a sociological regime that will guide the world towards the final stages of human development:

Thus it is that Biology in its remodeled form raises us to a point of view from which the true policy of the human race, nay of the whole animal kingdom, stands before us; a policy in which the whole forces of the living world are combined for the social regeneration of Man, who in his turn becomes responsible for the wise government of the other races.²⁶⁸

It is clear in both Comte and Mill that this responsibility, indeed morality, will not burden all mankind, but rather the enlightened few who grasp the scientific and teleological responsibility that comes with power. Here we turn back to the figure of Owen and the enlightened industrialists that followed in his footsteps. If society was to develop along the lines of a rational, sociological path, who better to entrust with the obligation than those already powerful but independent figures of commercial enterprise and wealth? Altruism is the quality that those in power must exhibit, in order to direct the fruits of progress towards the achievement of development. For this, a trustee is needed to guide and ensure proper development. Cowen and Shenton put it quite simply: for Comte, 'trusteeship is the political means of development, to make progress orderly, and it is of the third stage of positivism.'²⁶⁹

Edmund Burke had written in the late eighteenth century that the trustee – in distinction to the delegate – is a figure empowered to use their judgement in political decision-making:

Parliament is not a congress of ambassadors from different and hostile interests; which interests each must maintain, as an agent and advocate, against other agents and advocates; [...] You choose a member indeed; but when you have chosen him, he is not member of Bristol, but he is a member of parliament.²⁷⁰

Where Burke argues for the relative autonomy of Parliamentary ministers, the notion of the trustee is easily extended to the extrajudicial

²⁶⁷ Comte, *System of Positive Polity, First Volume*, 500.

²⁶⁸ *Ibid.*

²⁶⁹ Cowen and Shenton, *Doctrines of Development*, 31.

²⁷⁰ Edmund Burke, 'Speech to the Electors of Bristol, 3 Nov. 1774', in Edmund Burke, *Select Works of Edmund Burke. A New Imprint of the Payne Edition* (Indianapolis: Liberty Fund, 1999). Vol. 4, <http://oll.libertyfund.org/titles/659>.

realm of the philanthropist.

The philanthropist is the 'trustee' who is self-elected to enable the rational conditions through which to regulate the normal state of society. Owen, as industrialist and philanthropist, takes it as his responsibility to oversee the configuration of ideal forms of worker management. The implementation of concepts from health reform and progressive sociological theory is an elective decision, not a sovereign mandate. In this sense, the difference between private enterprise and governmental regulation is collapsed into the paternal figure of the trustee. With constant attention to the behaviour and education of workers and providential guidance of their development, the philanthropist as social architect could hope to correct as much as possible the corrupting forces of disease, ignorance, and vice. The logic of the factory could be applied to help alleviate these forces and restore a sense of humanity to the working class. It is not about upending social order, but about conserving it, strengthening it for the benefit of all.

In the late nineteenth century, trusteeship was not something explicitly theorised by those who exercised it. Instead it had the status of a kind of universalist, rational morality that was to publicly shared. In *French Modern*, Paul Rabinow describes a similar quality in French industrial philanthropy, noting the emphasis on planning in the social hygiene exhibits of the 1889 Exposition Universelle in Paris. Designed by the industrialist reformer Emile Cheysson, the lesson taught by these galleries was the value of '*prevoyance*' as opposed to 'assistance':

While its motive was worthy, assistance was nonetheless dangerous: it actually increased misery by weakening moral resolve. *Prévoyance* accomplished the opposite: 'It gives as much as it receives; it strengthens rather than weakens moral verve; it uplifts rather than depresses; it respects the independence of the one who practices it while joining force with the efforts that assure the security of his future.' Forward-looking reformers demanded health, not dependency; hygiene, not disciplinary measures.²⁷¹

²⁷¹ Rabinow, *French Modern*, 177. Quotes from Cheysson are from: Emile Cheysson, 'L'économie sociale à l'exposition universelle de 1889,' *La Réforme sociale*, 3d ser., nos. 3-4 (13 June 1889): 235.

Formal and Social

Owen had understood that the development of this new social-industrialist society would require not only 'altruism' and attention to the future, but also a space in which to manifest these values as daily practice. More than simply the grounds of a factory, such a scheme might require the space of a town. In 1825, Owen purchased land from the Rappite community in Indiana to establish a new settlement, which he called New Harmony. It was initially to have an entirely new diagrammatical layout, designed around the requirements of Owen's doctrines, using the buildings left by the Rappites only as transitional spaces from which to launch the project. However, and perhaps inevitably, Owen's structures were not realised and the community became accustomed to the Rappite's architecture. So, although Owen realised the integral importance of *space* as an imperative for social experimentation and the symbolic value of a bespoke architectural scheme, in the end, there was no essential relationship between the social structure of New Harmony and the physical plan on which they were subsisting.

This conceptual gap between spatial ideology and spatial function persisted in town building projects that emerged from industrial trusteeship in the first half of the nineteenth century. Planned communities such as Saltaire, initiated by the textile manufacturer Titus Salt in 1853, are notable for their extensive provisions, but offered little in the way of formal innovation. As J.N. Tarn notes, Saltaire's solution was not much different than the commercial property on offer in London: The standard of building was beyond reproach – which was of course the argument used most frequently to defend the London model of tenement blocks. But Saltaire does more than merely reflect the London pattern, it shows that, in a rural setting when all the economic pressures on land values were removed, the thoughtful mill owner and his architect still regarded the urban solution as the obvious answer to the housing problem.²⁷²

²⁷² Tarn, *Five Per Cent Philanthropy*, 146.

This lack of vision or lack of ‘design answers’ to the spatial question is common across the period. As Tarn puts it, ‘There was no concept of layout which was special to this kind of idealism.’²⁷³ Despite their ambitions, these settlements were essentially an adjunct of industrial production. Although the architectural form and arrangement of buildings in projects such as New Harmony and Saltaire lacked any specific formal-ideological function, the notion of housing provision, general hygiene, order, and importantly, the specific jurisdiction of the estate as a space of exception from the disordered settlements around it were certainly significant to their overall role within the social. If not ‘architectural’ in the strong sense, these projects were certainly territorial.

Given this, it is no surprise that Robert Owen promoted the notion of ‘home colonies’ as a panacea later in his career. In 1841, well after the dissipation of his New Harmony community, Owen still advocated for new settlements, publishing *A Development of the Principles and Plans on which to Establish Self-Supporting Home Colonies* and other pamphlets.²⁷⁴ He also set up The Home Colonization Society, with an office and publishing house on Pall Mall to promote his particular brand of paternalist British communism. Home colonies were also on the agenda in the 1880s, endorsed by the likes of Kier Hardie and the Social Democratic Federation, as well as by Thomas Davidson, a co-founder of the Fellowship of the New Life, which would later become the Fabian Society.²⁷⁵ In 1905, the free market liberal Prime Minister Sir Henry Campbell Bannerman would even declare in a speech at Albert Hall that Britain needed to ‘colonise our own country.’²⁷⁶ Howard implicitly acknowledged a similar sentiment when he quoted the reformer John Burns in saying:

²⁷³ Tarn, *Five Per Cent Philanthropy*, 147.

²⁷⁴ Robert Owen, *A Development of the Principles and Plans on which to Establish Self-Supporting Home Colonies* (London: Home Colonisation Society) 1841.

²⁷⁵ Commentary in: Ebenezer Howard, *Tomorrow: a Peaceful Path to Real Reform, Original edition with Commentary by Peter Hall, Dennis Hardy & Colin Ward* (London: Routledge, 2003) 137.

²⁷⁶ ‘Sir Campbell-Bannerman at the Albert-Hall’, *The Times* (London) Friday December 22, 1905, 7. (also mentioned in Cowen and Shenton, *Doctrines of Development*, 7.]

I want all the energy, not to say the heroism, that the governing classes have shown in the subjugation of foreign countries directed and utilised in administration, in industry, and in making happy our fellow-countrymen, which is, after all, no mean ambition."²⁷⁷

In short, the enterprise and ambition of the colonial project was seen as a reforming programme that could be brought back to Britain to re-organise and re-invigorate an overcrowded, depressed urban population.

Stanley Buder has suggested that Ebenezer Howard's interest in the colonial idea was rather conventional, writing that, '*To-morrow* employs a style of reasoning common in communitarian writing of the period. A problem is posed in terms of antithetical developments. Then a colony is offered as the comprehensive solution.'²⁷⁸ But here I am less concerned with the communitarian dimension of the Garden City as 'home colony', which is undeniably shared with Owen and other intentional communities of the period. Rather, it is the evident conflation of a form of settlement that is explicitly arranged around the extraction of natural resources and the extension of state sovereignty with the ambitions of social reform and reinvention through the idea of a building project. The home colony as a *productive landscape* – but perhaps one that yields a social, in addition to an economic good – seems to be at the heart of the enterprise.

Howard's acknowledgement of E.G. Wakefield's writing is instructive in this regard, in that he observes both the social and the economic reasoning in Wakefield's *A View of the Art of Colonisation* (1849).²⁷⁹ Howard quotes Wakefield extensively on the logic of the colony, emphasising the governmental insight that one needed to draw upon 'colonists from all ranks' of society and not only the criminal classes. A more representative colony would, in Wakefield's words, give the 'creeping and climbing plants' of the lower classes 'trees of firmer growth for them to entwine round.'²⁸⁰ These

²⁷⁷ Raymond Blathwayt, 'No.1 – John Burns at Battersea', *The Idler* (January, 1893) 678. In: Howard, *To-morrow*, 142.

²⁷⁸ Buder, *Visionaries and Planners*, 65.

²⁷⁹ Howard, *To-Morrow*, 104-105. From: Edward Gibbon Wakefield, *A View of the Art of Colonization*, in *Letters Between Statesmen and Colonists*. Introduction by James Collier (Oxford: Clarendon Press) 1914.

²⁸⁰ Quoted in: Howard, *To-Morrow*, 104.

trees were of course, the trustees of British society – the noblemen and influential citizens who would ensure stability in transition. Wakefield argued that in ancient colonies where this rule was followed, ‘The lowest class again followed with alacrity, because they found themselves moving with and not away from the state of society in which they had been living.’²⁸¹ On the other hand, the balanced colonial population would not only be guided from above by the upper classes, it would also maintain the bonds of debt and commerce: an urban population, creating market conditions for production and consumption, would match the agricultural, working class population.

Moving beyond Wakefield, Howard seems to stress in *Tomorrow* the idea that the colony, or in this case, the home colony, would not be organised around the extraction or production of wealth for an absentee sovereign but rather an internally coherent enterprise that would develop a mutually beneficial division of labour. The Garden City would produce an economic profit as social wealth, redistributed to the community itself. Where New Lanark and New Harmony, Saltaire, and other developments such as Copley or Akroyden were always an adjunct to a single commercial venture, Howard seemed to seek out a colonial model that was increasingly detached from the mandates of the plantation or the factory. For this, he looked to William Lever’s Port Sunlight and George Cadbury’s Bournville, towns built by enlightened philanthropists whose main objectives were the provision of hygienic and pastoral settlements of their own design, independent of any direct reliance on industrial production. As Patrick Abercrombie described, Port Sunlight was ‘a standing object-lesson’, contrasting with the adjacent commercial properties. However, the object lesson in mind was still prefigured by the paternalistic role of the ‘city fathers’, mainly exhibiting how urban design could impart the virtues of philanthropic citizenship, rather than an internally coherent system of urban living. These model settlements exhibited their improvements over the colony and the factory town, but they were certainly not independent in the sense that Howard envisioned the Garden City. Port Sunlight in particular never actually gained economic

²⁸¹ Howard, *To-Morrow*, 104.

independence from its benefactors.²⁸² Bournville, on the other hand, did achieve a level of profitability – around five per cent on rents – but given the high standards and market rates of the development, it was often not able to house the working class families that were ostensibly its target beneficiaries.²⁸³

In each of these contexts, Howard seems to have seen some ingredient of his own idea, but found each lacking a kind of independent reproducibility. The colony relied on the external governance of the colonizing state, the factory town relied on the productivity of the factory – even the model towns relied on their benefactors in ways that made them difficult to take as templates for general urbanisation. And yet each provided some aspect of the settlement that would become Garden City. How do we account for the fact that, amongst all of these precedents, the Garden City is still regarded as a ‘unique’ and privileged catalyst of the modern town planning movement? The fact that Howard combined philanthropic, moral, and economic objectives into a planned settlement was not in itself wholly original. But as I suggested earlier, the significance of the Garden City is not to be found in the formula that it develops but rather in how it leverages these points of reference in order to rationalise a new argument for hygienic, modern, urban design itself as a principle for settlement. Where earlier schemes saw the city as a beneficent outgrowth of industry, or as a gift of economic philanthropy, the Garden City was designed first and foremost as a settlement based on the health and enrichment of the city, by and for itself, without reliance on an external logic. The mechanism, as it were, was the

²⁸² Patrick Abercrombie, ‘Modern Town Planning in England: A Comparative Review of “Garden City” Schemes in England’, *The Town Planning Review*, Vol. 1, No. 1 (Apr., 1910). Abercrombie also writes that, ‘The annual cost of the scheme to the firm is some £10,000 a year for interest, which is looked upon as a legitimate charge against the business owing to the increased efficiency and intelligence of workers housed under such invigorating conditions.’ [*Ibid.*, 19.]

²⁸³ Martin Gaskell, ‘“The suburb salubrious”: town planning in practice’, in *British Town Planning: the formative years*, edited by Anthony Sutcliffe (Leicester: Leicester University Press, 1981) 23.

city, and by its very nature, the plan would lead and develop social equity.²⁸⁴ This spatial determinism would engender a kind of developmentality integral to its proper functioning.

III. The Garden as an Organisational System

Contrary to my argument thus far, much emphasis has been put on the idea that Howard's original proposal was *not* primarily a physical form but a social idea.²⁸⁵ Frederick Aalen exemplifies this position when he writes: 'Howard, it must be emphasized, was more interested in social change than in physical forms. His garden city was not intended as an improved frame for the existing socio-economic system but as a vehicle of fundamental social transformation...'²⁸⁶ The problem here is that the critic's separation of form from content in the Garden City is a false dichotomy. What is most significant about Howard's proposal is that, like all ideas in planning, it is the physical and formal expression of a social idea. The form that it takes is not subordinate to the social project – it *is* the social project. Culture takes shape as a building project in the Garden City. Howard is not working through literary inspiration, nor through legal contestation, or through political revolution: he is working on the city. Furthermore, it is through this social-formal project that Howard articulates a deeply developmental vision for the management of population that is functional at one level, and representational at another. It is worth further investigating the formal properties and internal organisation of the Garden City.

²⁸⁴ Buder, *Visionaries and Planners*, 66. Also Pinder: 'Re-ordering the city was a means of re-ordering society, as he cast his vision of cities as both the symbol and materialisation of a more balanced, co-operative and "healthy" society. [Pinder, *Visions of the City*, 40.]

²⁸⁵ See: Frederick Aalen, 'English Origins.' In Stephen V. Ward, *Garden Cities: Past, Present and Future* (London and New York: Spon Press, 1992) 28-48; Hall, *Cities of Tomorrow*, 87-141; Robert Beever, *The Garden City Utopia: a Critical Biography of Ebenezer Howard* (London: Macmillan) 1988.

²⁸⁶ Aalen, 'English Origins', 29.

City, Country, and Garden City

There is a particular significance placed on the diagram, the photograph, and the map in garden city texts. No pamphlet or book goes unaccompanied by a visual reference to the improvements achieved by the planning idea, and this technique of copious visualisation begins with Howard and the drawings included in *To-morrow*. From the very beginning, the Garden City comes into view as a symbolic system in Howard's principle of the three magnets, City, Country, and Garden City. Not unlike a Venn diagram, the advantages of the city and the advantages of the country are all organised through the idea of the Garden City, and the magnet figures this ideal equilibrium in simple and balanced terms – *la ville moyenne*, as Quetelet might have said. Equally iconic are the radial plan diagrams of the Garden City that feature in *To-morrow*, showing the essential plot of the settlement as a balanced arrangement of housing, industry, agriculture, and civic activities. In terms of distribution and density, a botanical paradigm is merged with the medical paradigm of the sanitary city. Evaluated functionally, the diagram is anatomical. Viewed in terms of representation, it is botanical. Through the image and morphology of the English garden, Howard takes the botanical connotations of settlement quite literally and designs a social distribution based on planting patterns.

Following Rousseau and his total rejection of the city of Paris, Anthony Vidler has written of eighteenth century architecture that:

The proper environment of natural society was nature, the only surroundings that could reconstitute the individual soul in harmony with himself and his fellows were natural, the only paths to a utopia situated firmly within the personality were those of a *promeneur* through the landscape, reflecting on Self and Other, and attempting to achieve a state of transparent perception between both.²⁸⁷

In contrast, Howard's evocation of nature is not Rousseau's 'state of nature'. In the Garden City, the country is re-introduced, but specifically as something that can be put to work. It is a tended domestic nature: the garden. Howard proposes it as a balance, with the country taking over the city and the city technologising the country, but what becomes evident in the elaboration of the scheme is that the country must ultimately be organised, and in its

²⁸⁷ Anthony Vidler, 'Scenes of the Street', in *Scenes of the Street and Other Essays* (New York: Monacelli Press, 2011) 39.

organisation, the system of urbanisation prevails. The city/country binary falls apart, like nature and culture, organism and mechanism. The country becomes an organised system - it becomes urbanised - through town planning.²⁸⁸ We might even say that this blurring of distinction is actually a feature of *urbanism*: the urban milieu does not distinguish between city and country – only between different levels of organisation.

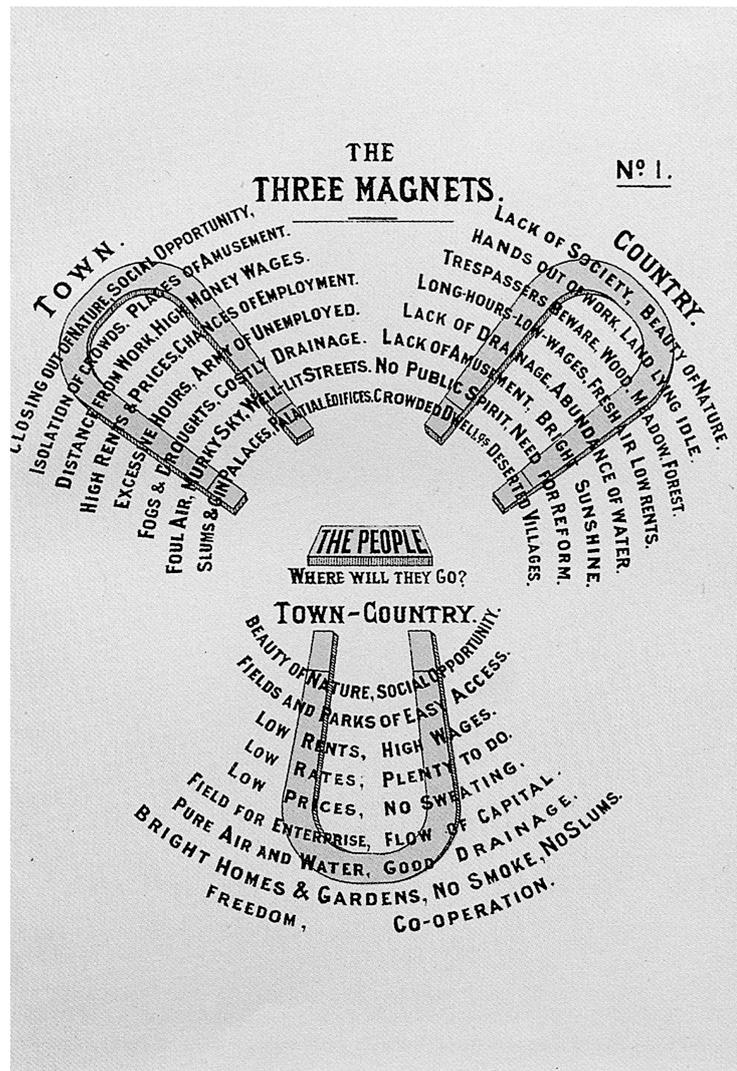


Fig. 10: Ebenezer Howard's 'Three Magnets' diagram from *Tomorrow: A Peaceful Path to Real Reform* (1898).

²⁸⁸ There is no outside. As Mumford noted in *The Culture of Cities*, even conservation is a function of urbanism: 'Shrinking from the problem of orderly collective control, people overvalued the wild, the irregular, the unrestricted—forgetting the fact that the wilderness itself could not continue to exist, on the edge of the paleotechnic environment, without eventually invoking bold administrative supervision by the community over the land and the land-uses.' [Lewis Mumford, *The Culture of Cities* (New York: Harcourt Brace, 1938) 203.]

The Space Between People

The garden immediately shows the emphasis placed on the hygienic internal organisation of parts – the functional, physiological milieu of the master plan. In *Town Theory and Practice*, W.R. Lethaby describes this as the ‘medium’ of the city, writing that, ‘People, we ourselves, exist individually in a medium, and if this medium has become thin and dry, our lives must necessarily wither up too. Our towns have to be made places of bodily health and spiritual refreshment, pleasant to live in and to visit.’²⁸⁹ There is a distinct emphasis on the search for the correct, or normal spatial relations that might achieve this ‘bodily health and spiritual refreshment’.²⁹⁰

In the Garden City, this medium is explicitly defined as an internally coherent entity, demarcated by physical boundaries. A lasting concept in Howard’s proposal has been the notion that, in opposition to the potentially endless proliferation of the urban, the garden city should provide a discrete boundary, which the urban pattern could not transgress. This agricultural greenbelt would be, as Lewis Mumford called it, a ‘two-dimensional horizontal “wall” [that] would serve not merely to keep the rural environment near, but to keep other urban settlements from coalescing with it: not least, it would, like the ancient vertical wall, heighten the sense of internal unity.’²⁹¹

Whereas the medieval city was walled to protect it from external threats, the Garden City was circumscribed to protect it from the production of internal threats of overcrowding and sprawl. The green belt, as a normative functional device, ensured that progress would be tempered by development, allowing the ideal number and distribution of inhabitants to enjoy the amenities of Garden City without worrying about the uncontrolled growth of settlement. The representational value of the greenbelt was also felt in the

²⁸⁹ W.R. Lethaby et al., *Town Theory and Practice*, introduction by C.B. Purdom (London: Benn Brothers, Ltd., 1921) 50.

²⁹⁰ In the same volume, Raymond Unwin entitles his essay, ‘The Town and the Best Size for Good Social Life...of a size that makes possible a full measure of social life, but not larger’ [Raymond Unwin, in Lethaby et al., *Town Theory and Practice*, 80-102.]

²⁹¹ Lewis Mumford, *The City in History* (New York: Harcourt, Brace & World, 1961) 587.

landscape that it produced for the city dweller – always within reach of agriculture and pastoral comforts.

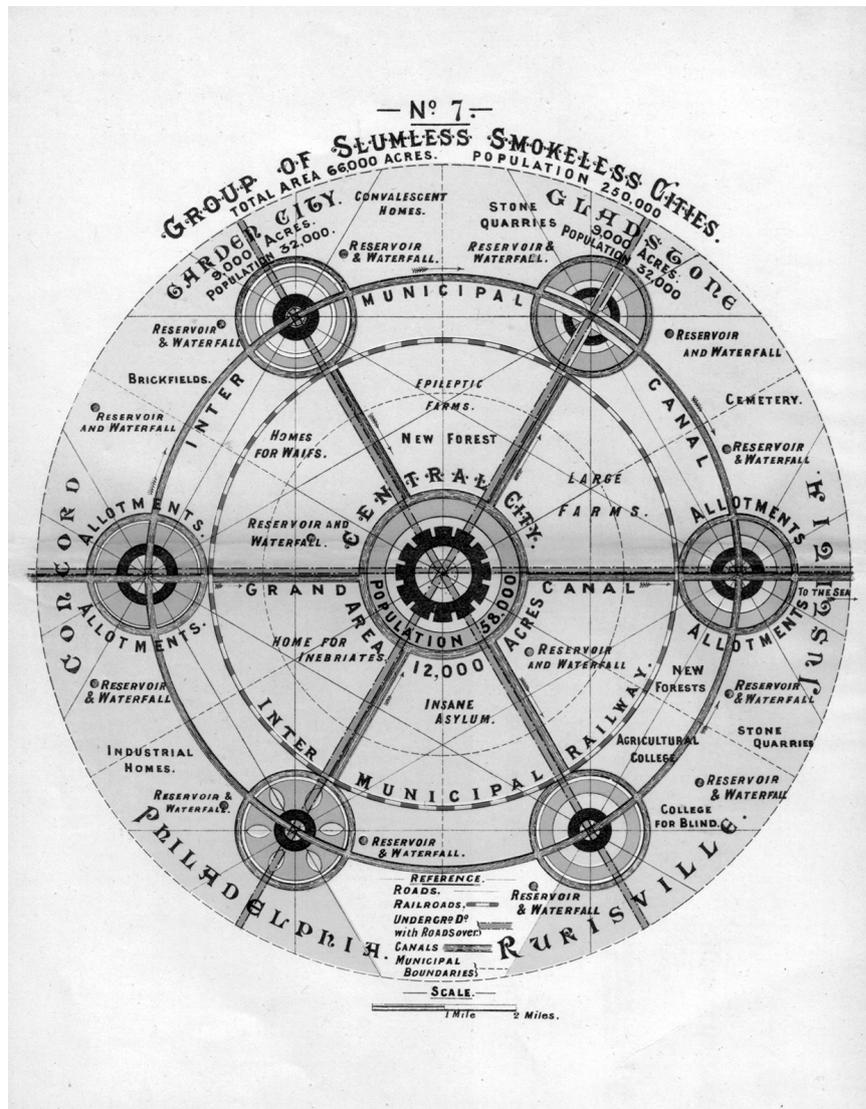


Fig. 11: Ebenezer Howard's radial 'Group of Slumless Smokeless Cities' diagram from *To-Morrow: A Peaceful Path to Real Reform* (1898).

Where earlier model settlements such as Saltaire might have merely reproduced the regimented character of urban architecture, producing a mass centralisation of the population, the Garden City aimed to take full advantage of available space. In Howard's original estimation, the ideal Garden City would house 32,000 people on a land area of 6,000 acres. If the urban problem was one of density, the Garden City made a science of density and

the proper distribution of population.²⁹² Following the arguments of Peter Kropotkin, Howard realised the relative advantage of a network of small-scale industries, as opposed to the large industrial operations that were the cornerstone of previous experiments.²⁹³ Rejecting the ideology of ‘bigness’ Howard sought new norms that would employ moderation and balance in the service of social goals.

Although it is not stressed in Howard’s text, nor seriously dealt with in contemporary garden city endorsements, decentralisation also entailed externalization, a factor that was evident in the radial diagrams in *Tomorrow*. Outside and between the main centres of activity in the diagrams, we see specific areas that have been set aside as ‘asylums for blind and deaf’, ‘convalescent homes’, and ‘farm for epileptics’, etc. These designated spaces would organise and account for the pathological members of the population, separating them out from the healthy, productive family units. This reinforced the latent connection between philanthropy and therapy. Such a therapeutic emigration was regularly called for in social reform, most notably in Alfred Marshall’s *Where to House the London Poor* (1885) where he describes how certain populations would benefit from their removal to the countryside, whereas other classes were so degenerate that they could not be moved.²⁹⁴ Town planning, and the Garden City model in particular, proposed to design the city in such a way that spatial organisation itself would alleviate and correct these urban ills.

²⁹² F.J. Osborn reflects on the semantics of ‘decentralisation’, making a distinction between the way it is used by Garden City advocates and its reputation in the United States as a byword for unplanned development beyond the city. This he would more accurately describe as Diffusion. To counter the ensuing confusion, planners in the twentieth century began to use the word ‘Dispersal’ but he endorses the unwieldy term ‘Sub-Centralization’. [F.J. Osborn, *Green Belt Cities: The British Contribution* (London: Faber & Faber, 1946) 182.]

²⁹³ Peter Kropotkin, *Fields, Factories and Workshops: or Industry Combined with Agriculture and Brain Work with Manual Work* (London: Swan Sonnenschein and Co., Ltd., 1901) 352.

²⁹⁴ Alfred Marshall, *Where to House the London Poor* (Cambridge: W. Metcalfe and Son, 1885) 6.

Following this logic of segmentation and boundary, the greenbelt concept also necessitated a principle of propagation, in which the Garden City would replicate itself on a new site when the need arose. Population, whether industrious or degraded, was considered problematic if allowed to increase too much or become too dense. Propagation emphasized the fact that the Garden City was *internally* and topologically contingent, rather than geographically specific. It is this very quality of the Garden City as a replicating and organic whole that marked it out against the existing urban condition. By taking the city itself as the unit of production, the Garden City does not expand endlessly; it would segment at the border of the green belt and form a new community at a distance from the original. It was also for this reason that the Garden City idea has been accused of being anti-urban, and perhaps rightly so. Jane Jacobs has criticised the Garden City as a concept that *prevented* the formation of what she would consider the modern city:

The town and the green belt, in their totality, were to be permanently controlled by the public authority under which the town was developed, to prevent speculation or supposedly irrational changes in land use and also to do away with temptations to increase its density – in brief, to prevent it from ever becoming a city.²⁹⁵

For Jacobs, the convivial proximity of people defined the very character of the city, against the ‘urbanism’ of the planner, whereas for Howard and other Garden City sympathisers such as Lewis Mumford, the redemptive sociality of the city could only be ensured by a ‘healthy’ and well-defined distance, designed precisely to fend off the congestion of the urban. For both, urbanism is a problem. In this sense, the organic integrity of the ‘city’ and the ‘town’ are deployed precisely to counter the destructive logic of the ‘urban’. As the political philosopher Murray Bookchin argued, the antithesis

²⁹⁵ Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House Inc., 2002) 27-28. This Anglo/American semantic question has many disconnects. For instance, British town planning exhibits an enduring hostility to the urban. ‘Urban’ and ‘urbanism’ are not nearly as common in the literature, and these are often substituted with the anachronistic or understated terminology of the ‘town’. Other quaint artefacts of what we call the urban condition today include regular use of ‘shire’, ‘village’, and ‘public realm’ (conflating the royal with the public). Aside from novelty, this also demonstrates a certain obfuscation of the modern legal and administrative, even technical realities of urban and suburban form.

of the city is not the country it is the urban.²⁹⁶ But if Jacobs sees her own project opposed to that of the Garden City, from the epistemological perspective, their positions share a common conceptual problem; in defence of an idea of the city against the urban and towards the development of civic life.

Circulation

Within the green belt, the organisation of the Garden City followed an organic and a mechanical logic simultaneously. In addition to the topological and organic formality of the Garden City as a work of urban design, there is also an integral role for technology, which takes up a familiar role in the establishment of the hygienic community. As I have already shown, the principle of circulation is a concept that recurs in any model of the city that is based on a functional paradigm. As long as the city is regarded as a machine, an environment, or a body, it will involve a principle of circulation in which energy, or value, moves through the system. Howard takes up the notion of circulation in the first edition of *To-Morrow*, where the appendix is dedicated to 'Water Supply'.²⁹⁷ Here, Howard endorses the 'separate system' that Edwin Chadwick had envisioned, separating sewage from surface drainage and rainfall. Earlier in the text, and directly after a description of the wide and amenable road and rail infrastructure in Garden City, Howard also endorses the use of sewage for agricultural fertilizer.²⁹⁸ Howard heightens the circulatory, technological nature of his concept when he describes the advantages of designing this modern infrastructure from the ground up:

Subways for sewerage and surface drainage, for water, gas, telegraph and telephone wires, electric lighting wires, wires for conveying motive power, pneumatic tubes for postal purposes, have come to be regarded as economic if not essential. But if they would be a source of economy in an old city, how much more so in new ones; for on a clean sheet it will be possible and feasible to use the very best appliances for their construction, and to avail ourselves to the fullest extent of the ever-growing advantages which they possess, as the number of services which they accommodate increases.²⁹⁹

²⁹⁶ Murray Bookchin, *Urbanization without cities: the rise and decline of citizenship* (Montreal: Black Rose Books) 1992.

²⁹⁷ Howard, *To-Morrow*, 153-167. Also referenced in Pinder, *Visions of the City*, 48-49.

²⁹⁸ Howard, *To-Morrow*, 17 & 28.

²⁹⁹ *Ibid.*, 48.

In descriptions such as these we begin to get a clear sense of how the Garden City was a diagrammatic and spatial attempt to not only critique but also harness the pattern and technologies of urbanism for the benefit of a carefully assembled community. No longer would infrastructure or byelaws determine the shape of the city – instead, the plan would organise and distribute technology according to the planner’s will. The Garden City would be, perhaps paradoxically, a liberal zone of circulation framed and contained by the providential design of the town planner.

IV. Problems in the Closed System

So far I have focused on the topological and conceptual relationships outlined by Howard in his original idea of the Garden City. By examining the formal relations of the idea as it was first proposed, I have tried to show how its developmental logic was envisioned as a material system, and how the functional and representational system created by Howard reinforced this conceptual coherence. The principles of the Garden City – merging the town and the country, integrating agricultural production with social reproduction and the detailed arrangement of parts within an organic whole – were territorial, architectural expressions of the political will to plan and to normalise the urban condition by design. But since I argued in opposition to claims that the Garden City was primarily a utopian project, we must also consider the implications of the Garden City in its applications and historical trajectory. It is well known that the Garden City has a limited scope in terms of built examples, and yet its conceptual influence is pervasive in modern planning. In many ways the Garden City was a discourse on the conceptual unity of the city as a problem before it was an architectural endeavour. This is not to say that the efforts to materialise the Garden City were not consequential, as indeed they initiated the first efforts to establish institutional visibility for town planning practice in Britain.

Within eight months of publishing *Tomorrow: A Peaceful Path To Real Reform* in 1898, Howard had founded a Garden City Association with the

objective to pursue a practical experiment and to promulgate the values outlined in the book. The Garden City Association was only the first of a number of organisations to form in the first years of the twentieth century around the idea of town planning as a specific technique of social reform. Within the historiography of this period, Howard's contribution has had the paradoxical status of being a formative moment in planning, but also a practical failure. Making the conceptual leap from the plan of the Garden City in *To-morrow*, to the institution of town planning involves a number of conflicts and divergences, each revealing some aspect of both the inherent limitations of the Garden City and the strategic departure made by town planning as a profession and as a discourse.

Even as a proposal, the formal unity of the plan was put into question. Sigfried Giedion famously criticised the fragility of Howard's idea in *Space, Time and Architecture*, observing that:

It is easy to see why the original idea of the garden city, 'where town and country are married,' was doomed to failure. No partial solution is possible; only preconceived and integrated planning on a scale embracing the whole structure of modern life in all its ramifications can accomplish the task which Ebenezer Howard had in mind.³⁰⁰

On the other hand, in his introduction to *The Garden City Past Present and Future*, planning historian Stephen Ward argues that, 'The fact that the original garden city idea was capable of being taken apart and applied selectively was of huge significance in allowing the idea to persist and spread.'³⁰¹ But which *idea* is Ward referring to here? The question is whether or not the Garden City was actually an idea that could be taken apart and applied selectively or whether such a process would inherently change the nature of the project. Howard himself is unequivocal on the organic integrity of the concept:

[It] is essential, as we have said, that there should be unity of design and purpose – that the town should be planned as a whole, and not left to grow up in a chaotic manner as has been the case with all English towns, and more or less so with the towns of all countries. A town, like

³⁰⁰ Sigfried Giedion, *Space, Time and Architecture* (Cambridge, MA: Harvard University Press, 2009) 784-5.

³⁰¹ Stephen Ward, 'The Garden City Introduced.' In *Garden Cities: Past, Present and Future* (London and New York: Spon Press, 1992) 2.

a flower, or a tree, or an animal, should, at each stage of its growth, possess unity, symmetry, completeness: and the effect of growth should never be to destroy that unity, but give it greater purpose; nor to mar that symmetry, but to make it more symmetrical; while the completeness of the early structure should be merged in the yet greater completeness of the later development.³⁰²

How, then, did the garden city idea, and indeed the Garden City Association begin to move from an idea of total formal unity to what Ward calls ‘an idea that could be taken apart and applied selectively’? As with all construction projects, the answer begins with money.

Finance as Design

It has been observed that a fifth of Howard’s book was dedicated to financial considerations; most likely because the primary audience for *To-morrow* were the potential philanthropists and investors who would be necessary to achieve the project.³⁰³ Howard was at pains to present the Garden City as providing good value for money, rather than seeking the bare minimum quality of material and habitation that was achieved in the byelaw system. More importantly though, the financial considerations of the Garden City directly reflected the social and symbolic relations that Howard envisioned operating within the community. The first principle of this system was that large tracts of land should be purchased at agricultural prices, the value of which would increase dramatically when the new town had been built, creating equity for those who made the initial investment. The second principle, linked to the first, was that the subsequent increase in rents would be used to pay off the loans from the initial investment and any savings (which would increase in line with land values) would be held in trust by the management of the Garden City and reinvested into the community. In this way, the finance and maintenance of Garden City would have an internal circulatory equity structure, managed by trustees, in a system Howard called ‘the vanishing point of landlord’s rent’.³⁰⁴ In order for this financial order to function, though, the land would need to be owned and managed by a single

³⁰² Howard. *To-morrow*, 45.

³⁰³ Howard, *Tomorrow* (2003) 65.

³⁰⁴ Howard, *To-morrow*, 21-23.

entity, a concept that Howard borrowed in part from the writings of Herbert Spencer and Thomas Spence.³⁰⁵

These specific financial principles would not only provide a profit for both Garden City residents and investors but it would also be able to control the urban design, mix of use, tenancy, and all other aspects of the venture. As W.A. Eden put it, 'control of the land carried with it the power to control most other matters' and this, in short, was the lynch pin of the 'symmetry and unity' of Garden City.³⁰⁶ And yet, with the growing membership in the Garden City Association and the eventual establishment of the Garden City Pioneer Corporation to execute the fundraising and development of the first Garden City at Letchworth, we immediately begin to see the disentanglement of these contingent elements, and the disaggregation of the formal integrity of the plan.

It was under the direction of Ralph Neville, appointed by Howard as the chairman of the Garden City Association, that the industrialists and other wealthy investors in Letchworth were initially attracted. But as Stanley Buder suggests, although Neville might have been sympathetic to Howard's financial principles, he did not emphasise them when promoting the project to potential investors, instead he stressed the high-quality housing and hygienic benefits of decentralisation for working class families.³⁰⁷ In order for Garden City to be realised, it had to be reconciled with the existing political economy. Most importantly, when Letchworth was finally begun in 1903, Neville instituted a financial plan that bore no resemblance to Howard's 'vanishing point'. As Buder describes:

[First Garden City Limited's] charter, drawn up personally by Neville, limited dividends to 5 percent. From the first, Neville made it clear that the company's ultimate responsibility was to its stockholders, not to the four hundred tenants acquired with the site nor to Letchworth's future

³⁰⁵ Howard, *To-morrow*, 109-III.

³⁰⁶ W.A. Eden, 'Studies in Urban Theory.— II, Ebenezer Howard and the Garden City Movement: Illustrated.' *Town Planning Review* (Vol. 19, Issue 3-4, 1947) 135.

³⁰⁷ Buder, *Visionaries and Planners*, 83. Also: Anthony Sutcliffe, 'From town—country to town planning: Changing priorities in the British garden city movement, 1899–1914', *Planning Perspectives*, 5:3, 1990, 262-3.

residents. Such a policy was required by law, and its neglect would only discourage similar ventures.³⁰⁸

Stephen Ward has pointed out how this situation had the effect of framing Letchworth as primarily a ‘model environment’ rather than a ‘model society’, one in which the formal qualities had been embraced but the social programme discarded.³⁰⁹ But if we accept the radical contingency of Howard’s original concept, then it seems that one cannot be extricated from the other without a corresponding effect. The legible effect was that, with the introduction of conventional economic controls on Letchworth, its formal priorities also began to change. We see a more conventional style of building design under the direction of Raymond Unwin and Barry Parker, and a loss of the strong sense in which Howard sought to design and plan urbanisation according to the will of his programme. The established economic order of the housing industry was amenable to hygienic urban design and could see the benefits of decentralization and proximity to nature, but a socially controlled economy strained the norms of estate finance and construction. Instead, what seemed to occur was a very rapid expansion of the garden city idea into the realm of the garden suburb and other more general planning objectives. ‘Compared with the self-centred garden city,’ writes Martin Gaskell, ‘a garden suburb scheme sought to ensure only that the future growth of existing towns should be on healthy lines.’³¹⁰ Economic principles and the maintenance of shareholder interest ultimately outweighed the ambitions of Howard’s collectivist redistribution of wealth.

In the retreat from the singularity of the Garden City towards the more general project of ‘garden suburbs’ and ‘satellite towns’, the stated objectives of the nascent town planning profession begin to take shape as an ensemble of techniques aimed at the production of a hygienic pattern of master planning, rather than the production of an authored invention. By way of illustration, we might observe that in 1902, the Garden City Pioneer

³⁰⁸ Buder, *Visionaries and Planners*, 84.

³⁰⁹ Ward, *The Garden City Past, Present and Future*, 4.

³¹⁰ Gaskell, ‘Suburbs Salubrious’, 25.

Company, formed by the Garden City Association to establish Letchworth, had the following stated objectives:

To promote and further the distribution of the industrial population upon the land upon the lines suggested in Mr. Ebenezer Howard's book, entitled *Garden Cities of To-morrow* (published by Swan, Sonnenschein & Co., Ltd., in 1902), and to examine, test, and obtain information, advice, and assistance with regard to the matters therein contained, with the view of forming in any part of the United Kingdom 'Garden Cities' (that is to say): towns or settlements for agricultural, industrial, commercial, and residential purposes, or any of them, in accordance with Mr. Howard's scheme, or any modification thereof.³¹¹

Just one year later, in a Special General Meeting of the Garden City Association, the objectives of the organization were drafted as follows:

...relieving urban congestion, distributing the population more widely over the land, and advancing the development of the people, by (a) establishing Garden Cities on the lines suggested by Howard, (b) encouraging employers in their tendency to move from crowded centres to rural districts, and cooperating with them in their efforts to secure healthy housing close to the place of work, (c) cooperating with other organizations in the promotion of legislation to enlarge the powers of public authorities to secure '*a solution of the housing problem and improved systems of communication*' (author's italics), (d) promoting the '*scientific development of towns*' (author's italics) so that the evils of haphazard growth can be avoided in future, and (e) promoting the building of sanitary and beautiful houses with adequate space for gardens and recreation.³¹²

The striking difference in the number and quality of objectives may be attributed to the increasing distinction between the aims of the Company in relation to Letchworth and the more general, educational and promotional role of the Association. As the secretary of the Garden City Association Thomas Adams wrote in 1903, 'The function of the Garden City Association is surely the higher one of the teaching of sound principles in regard to a particular aspect of social reform, and not in acting as an advertising agent of the Company'.³¹³ But by any measure, the scope of what was in 1903

³¹¹ Quoted in C.B. Purdom, *The Garden City: A Study in the Development of a Modern Town* (London: J.M. Dent & Sons, Ltd., 1913) 27-28.

³¹² Quoted in: Anthony Sutcliffe, 'From town—country to town planning', 263.

³¹³ Thomas Adams, *Memorandum by the Secretary as to the 'raison d'être' of the Association, its relationship to the Garden City Company, and other matters which require consideration*. (London: Garden City Association) 1903. Quoted in: Dennis Hardy, 'From New Towns to Green Politics.' In Stephen V. Ward,

considered within the remit of the Garden City was greatly expanded. It is from this point on, as Anthony Sutcliffe has argued, that the Garden City Association became more generally concerned with taking an active role in the consolidation of planning principles in support of what would eventually become the *Town Planning Act, Etc. of 1909*.³¹⁴ By 1910, the year of the first Town Planning Conference organised by the Royal Institute of British Architects in London, Patrick Abercrombie was able to observe that, ‘the two chief organisations which have been the mouthpiece of this movement have recently added the words “Town Planning” to names which formerly stood for Garden Cities and Housing Reform.’³¹⁵ And with the publication of the Tudor Walters Committee report of 1918, the prerogatives of ‘town planning’ had all but taken over from the discrete programme of the Garden City.³¹⁶ As Peter Hall describes, the Tudor Walters report bears the unmistakable stamp of the architect and planner Raymond Unwin, a key member of the report’s committee, and also the designer of Letchworth and Hampstead Garden Suburb. Although a long time advocate of garden city principles, Unwin’s interpretation was consistently formal, rather than conceptual, and although his designs were certainly along hygienic and decentralist principles, he was not overly concerned with issues of territorial circulation or community financial equity. However, what was clear in the Tudor Walters report and its recommendations – much of which is taken into the *Housing and Town Planning Act, Etc. of 1919*, was that Unwin’s more compliant interpretation of town planning was, as Ward suggested, a process of taking apart and applying selectively the constituent parts of the Garden City to create new assemblages, amenable to existing norms of finance and urbanisation.

Garden Cities: Past, Present and Future (London and New York: Spon Press, 1992) 190.

³¹⁴ Sutcliffe, ‘From town–country to town planning’, 1990.

³¹⁵ Patrick Abercrombie, ‘Modern Town Planning in England: A Comparative Review of “Garden City” Schemes in England’, *The Town Planning Review*, Vol. 1, No. 1 (Apr., 1910) 18.

³¹⁶ [Cd. 9191.] ‘Report of the Committee appointed to consider questions of Building Construction, in connection with the provision of Dwellings for the Working Classes, and report upon methods of securing economy and despatch in the provision of such Dwellings.’ *Reports From Commissioners, Inspectors, And Others: Ten Volumes. Session 12 February 1918 21 November 1918. VOL. VII.* HMSO 1918.

And yet, if the notion of the Garden City was to be exploded, disaggregated by its own advocates and applied selectively, the field of discourse was not entirely clear on what exactly its successor, 'town planning' was to take as its specific area of expertise, other than, as Thomas Adams suggested, the general positivist domain of the 'scientific development of towns'. Indeed, although the Tudor Walters report and the 1919 Act were seen as great victories for the general promotion of planning, they were also seen as the final dissolution of the Garden City project.

In a sense, town planning returns, after the Garden City, to the project of managing the urban condition, but it returns as a newly defined discourse operating within an integrated institutional basis. The question of the city decisively shifted from being regarded as a vector of disease, to being a strategy of health – with planning and urban design as the guarantors of development. Within this shift, the figure of the town planner was consolidated, and the political role of planning was established. In reviewing the Garden City, I have aimed not to lament its 'failure' in architectural terms, nor even to suggest how it might have succeeded or better achieved some of its so-called 'utopian' goals. Instead, I have traced the development of Garden City discourse to show what kind of interventions into the built environment that discourse made possible. By establishing the legitimacy of a new discipline called Town Planning and the proposition of the city as a coherent technical system to be elaborated as an agent of reform, the Garden City both fails as a practical experiment, and succeeds as the basis for a new way of describing, studying, and indeed governing the urban through a developmentality of the plan. In the next chapter I will show how this developmentality seeks to establish an ontological basis for planning, far beyond the scope of the Garden City settlement.

6. THE NATURAL HABITAT OF MAN

I. Introduction

At the end of the last chapter, I emphasised a distinct transition away from the Garden City as a discrete project, towards the articulation of a generalised professional mandate for town planning as a regulatory practice. Having started with the Garden City as its axiomatic concept, British town planning attempted to establish its field of inquiry and expertise by linking previously distinct problems through the question of the city, and through this, produce the semblance of a unique field of knowledge and a new mechanism of reform. In a little more than a decade, this enthusiasm for the Garden City was ultimately normalised and integrated into the conventions of urban political economy at the turn of the twentieth century. One might say that town planning is forged precisely in the recuperation of the Garden City as a set of concepts, rather than a singular formal prescription for urban design. In this sense, the 'failure' of the Garden City is also the establishment of a new dimension of the developmentality of planning in which the city-as-environment, more so than the walled garden, becomes a tool of thinking and design.

But even as town planning attempted to claim a whole range of urban reforms and design techniques as its proper domain, it remained in contention for these techniques with cognate professions such as architecture, engineering, and the building trades. If at least one guiding principle remained as town planning turned away from the Garden City project, it was that the city itself was an aesthetic and hygienic unit of knowledge that should be comprehensively developed. But if the city-unit was a central concern of planning, the normative techniques by which to describe it, to intervene and develop it were still in need of substantial elaboration and refinement. Some might even argue that this articulation of the explicit objectives of planning practice have never been fully realised, but it is towards

the development of this domain and its conceptual implications that we turn to in this chapter.

In a sense, the failure of the Garden City as a bounded, internally rational idea already suggested a solution: a larger frame of reference was needed. Here, I will argue that in parallel, and certainly in discourse with the Garden City idea, was a social-scientific, deeply biopolitical set of techniques and concepts being developed by a number of thinkers around 'regional planning'. In order to establish a firm ground on which to pursue planning as a specific form of expertise, regional planners did not seek to limit the field to more circumscribed formal routines, but rather to make the developmentality of the city even more extensive and more explicit – to fully develop the biological and environmental language of planning as a kind of life science. Regional planning intervenes in the discourse precisely to reorganise the technical practices, as well as the ontological forms of reasoning that establish the agency of planning after the Garden City.

Typically, regional planning has been read by historians as an extension of the Garden City and is often run together in the broader surveys of urbanism, but here I will insist on the distinction, where the concept of the region and the specific practices associated with the regional idea lead to the elaboration of a comprehensive rationale for modern planning discourse. In this sense, this chapter will not proceed as an addendum to the Garden City as it might in a purely chronological account. The fundamental distinctions provided by regional planning require their own space for examination and provide us with an important link to latter post-war planning that cannot be meaningfully extrapolated directly from Ebenezer Howard or the concerns of Garden City advocacy. Indeed, the ideas of Patrick Geddes, Patrick Abercrombie, Lewis Mumford and others did not simply apply Garden City principles in a wider framework; they fundamentally recontextualised the field based on geographic, biological, and natural historical principles.

Patrick Geddes is particularly important in this chapter, as it is his work that brought together many of the fundamental concepts of regionalism into a synthetic practice, and it his students and advocates that perpetuated these practices well into the twentieth century. Indeed, if the formal origins of modern town planning are conventionally attributed to Howard, it is to Geddes that we attribute the development of modern planning *methodology*.³¹⁷ And here I will argue that it is precisely through methodology, and a new approach to the production of planning knowledge, that the field finds a renewed mandate for the governance of growth and development by way of the city. In examining the claims of Geddes and the regional planning discourse, I will attempt to show that there are two key geographies in operation: first a recuperation of the medico-cartographic geography of health which articulated the city in crisis, and then a natural historical, humanist geography that proposes a new equilibrium between the city and nature. The combination of these spatial logics allow regional planning to move from a regulatory framework of public health, towards the theoretical framework of planning as ‘bio-social’ science.

First, the chapter will address this question of how regional planning distinguished itself while at the same time consolidating planning as a professional practice. Here, the ideas of Patrick Geddes are crucial to the establishment of a synoptic and geographical practice based around a specific set of techniques. In the second part of the chapter I will look at the conceptual impact of these practices: how the change in scale and temporal considerations results in a new framework for planning. In the final section, I consider how this knowledge/power promulgates itself through didactic exhibitions and models, and the inculcation of perspective through ‘outlook’. Through this analysis, we will see a developmentality of planning emerge that invites the participation of the wider public as ‘citizens’ while simultaneously reinforcing the professional status of planning knowledge.

³¹⁷ For some historians, Geddes represents the very inception of systematic planning methodology. See: Peter W. J. Batey and Michael J. Breheny, ‘History of Planning Methodology: A Framework for the Assessment of Anglo-American Theory and Practice’, *Geographical Papers*, Issue 79 (University of Reading, Department of Geography) 1982.

II. The City in the Region

In the January 1916 issue of the *Town Planning Review*, Patrick Abercrombie (then Professor of Civic Design at Liverpool University) outlined the principles of ‘civic survey’ as they pertained to planning. Survey would be a method by which to ‘not only deal with the town as it is, but study its past and make some forecast of its probable future.’³¹⁸ The first component of the process would consist of a ‘Theoretic Survey’:

... the following may be taken as some of the headings under which [a theoretic civic survey] might be prepared : -

- (a) Determination of type of town.
- (b) Historic study of growth.
- (c) Natural physical features, including wind and rainfall.
- (d) Population and density.
- (e) Health, including birth, death, and disease.
- (f) Recreation, including parks, &c.
- (g) Housing, including historic evolution.
- (h) Traffic.
- (i) Natural zoning or sub-division into districts.
- (j) Commerce and industry.
- (k) Land values.
- (l) Education.
- (m) Municipal services.
- (n) Archaeology, architecture, and features of natural beauty.³¹⁹

Such a comprehensive survey suggests the expanded remit of planning theory in the first decades of the twentieth century, a period in which the management of urbanisation became increasingly imbricated with the emergence of modern social sciences. As Abercrombie had noted earlier in the *Town Planning Review*, a ‘City Planning Bibliography’ underway at Harvard ran to 47 pages and did not ‘profess to be complete’, but merely sufficient ‘to meet the needs of students and practitioners’.³²⁰ The subjects were not merely eclectic. In such lists we see the effort to itemise and articulate a broad set of spatial concerns, perpetually focused on the management of urban growth and attentive to the biological life of the population. Abercrombie’s theoretic survey is part of a comprehensive report

³¹⁸ Patrick Abercrombie, ‘Study before Town Planning’, *The Town Planning Review*, Vol. 6, No. 3 (Jan., 1916) 185.

³¹⁹ *Ibid.*

³²⁰ Patrick Abercrombie, ‘Town Planning Literature: A Brief Summary of Its Present Extent’, *The Town Planning Review*, Vol. 6, No. 2 (Oct., 1915), pp. 77-100.

on life. What becomes clear in the second part of his description, the ‘practical survey’, is that planning has begun to specifically orient itself around the practices and values of geography³²¹:

It is not to be supposed that the theoretical survey can be compiled without much practical study of the site, and many people recommend that the first step should be the preparation of an elaborate ‘Surface utilisation plan,’ which is the Town Planner's counterpart of the Housing Reformer's House-to-house Visitation. On this plan the existing use of every square yard of ground is shown, based on personal investigation, and by this means a mass of information is obtained which is of the utmost value in arriving at precise degrees of density, &c.

But there is also another form of practical survey which is carried out with a direct eye to improvements. This consists in the thorough perambulation of the town by the expert, or preferably experts, accompanied if possible by a shorthand clerk; everything and anything good and bad connected with the city plan is noted on the spot, and by this means a collection of memorabilia is obtained which should be subsequently classified; these will prove of inestimable value in future planning, possessing as they do the vividness of personal observation. The best method of collecting these must be left to each to decide for himself, but there is no doubt that the greater part must be carried out on foot, supplemented by motoring in order to appreciate the rapid-transit point of view.³²²

Densely descriptive, the resulting surveys amounted to both a compendium of data and a document of performance, attempting to give a full report on the conditions of existence within a particular region. The planner and biologist Patrick Geddes, whom Abercrombie regarded as a mentor, had argued that the existing political divisions of town and county were ‘totally inadequate for modern purposes’ and ‘require[d] a thorough geographical survey, and a corresponding practical revision’, ultimately demanding a ‘Social and Political Atlas’ to guide planning practice.³²³ Less than a year before Abercrombie’s TPR essay on the survey technique, Geddes had written in his hugely influential regionalist text, *Cities in Evolution*: ‘In short, then, it takes the whole region to make the city.’³²⁴ Combining

³²¹ Geography, although perhaps an obvious reference point for any student of urbanism today, was not a central concern in town planning before the turn of the century.

³²² Abercrombie, ‘Study before Town Planning’, 187.

³²³ Patrick Geddes, *City Surveys for Town Planning: and the Greater Cities* (London: John Bale, Sons & Danielsson, Ltd., 1911) 5.

³²⁴ Geddes, *Cities In Evolution*, 198.

scientific discipline, literary and historical analysis, sociological data and aesthetic observations, the survey commanded a comprehensive assertiveness of spatial and historical *knowledge*. Geddes imparted urgency to the production of this knowledge, writing that, ‘action needs all the knowledge we can collect, and all the interpretation of it we can attain to.’³²⁵ Rather than the Garden City’s emphasis on the production of a topological projection of organic circulation, the survey technique proposed by Geddes and taken up by Abercrombie and others implicitly argued that the knowledge crucial to planning was to be found *in the site* of planning itself.

Such a comprehensive practice recalls the classical notion of ‘statistics’ that Theodore Porter described, which was not initially or even primarily numerical but rather a detailed description of all those categories that concerned the practice of the state.³²⁶ Most importantly for regional planning, this knowledge must come to bear on space – and ultimately on the condition of the built environment. And although Geddes’ notion of survey commended the work of the statistical offices and municipal inspectors, he reserved his greatest endorsement for those instances where the accumulation of facts had come to rest on the cartography of the population, such as Charles Booth’s ‘Life and Labour of the People of London’ or T.R. Marr’s ‘Survey of Manchester’:

Such surveys are not merely descriptive, or even statistical. As with the older and the later economists they are also geographical; and they set down their main results upon their respective city plans, and thus attain a new clearness. In this way they place under our eyes a detailed, yet generalized, view of the city, as a more or less large and complex hive of humanity, strangely differentiated, strangely crowded, here and there strangely defiled, strangely defective, decayed, diseased. How are we to improve this state of things?³²⁷

The regional survey demanded more than the mapping of a single question or condition derived from statistical knowledge. As we see in Abercrombie’s list, it is a synthesis of all manner of spatial and historical knowledge, bringing together concerns, once separately considered by the historian, the archaeologist, the public health officer, the civil engineer, and

³²⁵ Geddes, *City Surveys for Town Planning*, I.

³²⁶ Theodore Porter, *The Rise of Statistical Thinking*, 24.

³²⁷ Geddes, *City Surveys for Town Planning*, I.

the architect. However, we should also acknowledge that what Abercrombie proposed in 1916 was not exceptional. Indeed, it had become the norm of planning doctrine. With the idea of the survey as the basis of planning practice, we see that the heterogeneous group of actors that operated in earlier contexts were now consolidated in the idea of a unique profession. 'Survey before plan' brought together the whole range of techniques, from the gathering of data to the drawing up of interventions into the expertise of a unique protagonist: the town planner.³²⁸

The geographical region, and the idea of regional planning as the basis for town planning practice, was a discourse that emerged roughly in parallel to the Garden City project, however, contrary to many of the academic summaries of early town planning history, the scope and objectives of regional discourse were not merely concomitant or complimentary to the Garden City idea. 'Survey before plan' and survey technique were not activities outlined in the work of Ebenezer Howard, nor were they to be found in the mandates of the Garden City and Town Planning Association that followed. Rather than describing an object, the survey technique articulated a geographic field of interaction, rendering a picture of urbanisation beyond the discrete boundaries of the city form. In this sense, the emphasis after the Garden City was not *only* on the problems of density and decentralisation. Rather, it was the problem of sprawl, of satellite towns, railway networks and how to mediate them. Regional planning introduced concepts from French and German geography, biology, and sociology, drastically expanding the intellectual and spatial remit of the field. This was reflected in the diverse types of scientific and historical inquiries under consideration by planners even in 1916, and certainly as a matter of course by the 1930s.³²⁹

³²⁸ As Patrick Geddes writes, '...with a corresponding increase of populations, we see the civil engineer naturally developing into the town planner.'
[Geddes, *Cities in Evolution*, 198.]

³²⁹ For instance, the work of CIAM can be said to reflect this humanist, anthropological and geographical framework. An effective summary of these influences can be found in Volker M. Welter, 'Post-war CIAM, Team X, and the Influence of Patrick Geddes: Five Annotations by Volker M. Welter' (Conference proceedings) *CIAM Team 10, the English Context* (Delft: TU Delft, 5 November 2001) 87-110.

Valley Section

This shift towards the regional was legible not only in the apparent range of subjects under investigation, but also in the specific techniques introduced to spatialise planning knowledge. For instance, the ‘valley section’ was a form of diagrammatic narrative description adapted from Geddes’ associate, the French anarchist geographer Elisée Reclus. In his 1869 monograph *Histoire d’un Ruisseau*, Reclus had described the path of a stream from its origins in the mountains, all the way to its confluence with the sea, emphasising the human settlements that formed along its banks at different points.³³⁰ Reclus’ colleague Peter Kropotkin called this a ‘living picture’ of a territory, where the river basin functioned as a kind of evolutionary timeline, along which different cultural formations could be diagrammed.³³¹ By the turn of the twentieth century, Geddes adapted this technique as a starting principle of British town planning survey, suggesting that knowledge of the specific and comparative environmental character of cities should inform any subsequent planning decisions. As Geddes observed, ‘Such a survey of a series of our own river basins [...] will be found the soundest of introductions to the study of cities. The comparison of corresponding types at once yields the conviction of broad general unity of development, structure, and function.’³³²

For Geddes, the valley section allowed one to extrapolate any number of geographically determinant insights from the study of cities. Taken liberally, it meant that the economy of a city could be linked to its natural geographic location near a large bay or delta, that the diet and customs of the local population could be linked to the presence of forests or the historical conditions of agriculture and ratio of arable land, etc. Knowledge was now to be located in space, not only by the tables of the statistician or the medical reports, but also by a close historical reading of the environment and its socio-biology. Again, with the comparison of surveys, just as in the

³³⁰ Elisée Reclus, *Histoire d’un Ruisseau* (Paris: Hachette) 1869.

³³¹ Peter, Kropotkin, ‘Obituary: Elisée Reclus’, *The Geographical Journal*, Vol. 26, No.3 (Sep., 1905) 340-341.

³³² Patrick Geddes, ‘Civics: As Applied Sociology’, *Sociological Papers* (London: Macmillan and Co., 1905) 106.

comparison of statistics, the city becomes observable, as it were – or as Geddes said, ‘one finds beneath the apparent disorder of cities an underlying order of distribution’.³³³ The logic of geography became the logic through which planning could be organised as a historical, biological, and sociological project.

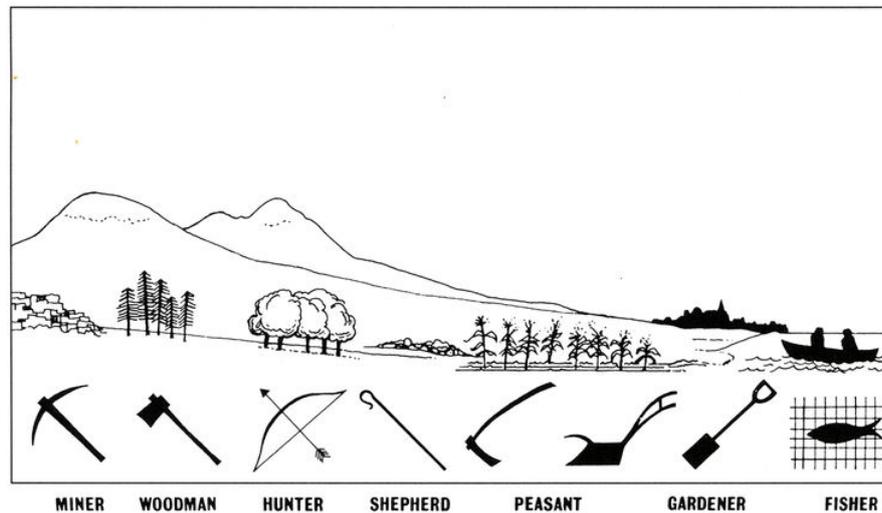


Fig. 12: The Valley Section diagram.

For Geddes, following Reclus, the city was something like a palimpsest of historical, geographical and geological timescapes, where, beneath the paving stones, one finds the logic of an archaic culture at work:³³⁴

At times we all see London as still fundamentally an agglomeration of villages, with their surviving patches of common, around a mediaeval seaport; or we discern even in the utmost magnificence of Paris, say its Place de L'Etoile, with its spread of boulevards, but the hunter's tryst by the fallen tree, with its radiating forest-rides, each literally arrow-straight."³³⁵

In the regional discourse, planning is not concerned with the implementation of a symbolically balanced geometric organicism as we might have seen in the plan of the Garden City.³³⁶ Rather, the geographical

³³³ John P. Clark and Camille Martin (eds.) *Anarchy, Geography, Modernity: The Radical Social Thought of Elisée Reclus* (Lanham: Lexington Books, 2004) 183.

³³⁴ Although there is not space to establish it here, it is likely that the slogan, 'Beneath the paving stones, the beach' is derivative of Reclus, who was a well-known French anarchist, and whose works were widely read in France in the 1950s and 60s.

³³⁵ Geddes, 'Civics: As Applied Sociology', 106.

³³⁶ This organicism is typified by Raymond Unwin, who also recommends a

logic is a puncture in the very conceptual sphere of ‘the city’ as a totality. In the valley section, the city itself is made a geographical feature, no longer contained by parish, council, or county, but beholden to the inscriptions of natural-historical settlement in the landscape. Here, the role of planning is consequently environmentalised. The maxim, ‘survey before plan’ although now a truism, encapsulated the fundamental precedent that environment, and knowledge of the environment, played for regional planners. Knowledge of the environment was ultimately the compilation and ordering of positive knowledge – information that would be put to work for the planning and regulation of the urban. Returning to Abercrombie, we see that ‘the resulting comprehensive treatment’ is always a guide to informed action:

At length, after profound study, having placed your city and grasped its true aims, having obtained your theoretic diagrams and data, having before you your practical notes, and, above all, having at the back of your head some mental picture to which you hope to make your town approximate, you are in a position to prepare a plan for its existing mass and its anticipated growth.³³⁷

In the following sections, I will take a closer look at the specific ways in which regional planning, through survey technique and geographical theorisation, drastically expand both the spatial and the temporal framework for planning practice.

The City in the Environment

Regional planning brought with it a distinctly developmental interpretation of environmental biology. Once again, we return to the notion of the *milieu* and its status as a regulatory concept for the city. Paul Vidal De La Blache, famous for his work in comparative human geography in the late nineteenth century, wrote:

survey of sorts in his seminal text *Town Planning in Practice* (1909). However, his method is primarily organized around pictorial imperatives of urban *design*, noting that: ‘The picture will grow in the designer’s mind as the various needs are considered and met; and all the while he is thinking out the main points of his problem he will be finding spots of natural beauty to be preserved, trees to be guarded from destruction, distant views from the town, and views into it of the fine buildings he hopes some day to see rise on their allotted sites, to be kept open.’

[Unwin, *Town Planning in Practice* (London: T. Fisher Unwin Ltd., 1909) 152-153.]

³³⁷ Abercrombie, ‘Study Before Town Planning’, 188.

The same concept persistently forces itself upon the mind as the intimate interdependence between inanimate objects and living beings is revealed with increasing clearness, whether it is referred to as 'milieu,' dear to the disciples of Taine, or 'environment,' frequently used in England, or even 'oecology,' [sic] a term introduced by Haeckel into the phraseology of natural science, –all of which in the end amount to the same thing. Mankind is a link in this chain.³³⁸

We might say that the valley section technique was one method by which the regionalists sought to dramatize this chain of existence between the animate and the inanimate in a new way. But the valley section and the geographical view were never merely descriptive in their application. The articulation of an urban ecology always framed the agency of human intervention; the geographic milieu should be cultivated, improved. As Paul Rabinow has shown, Vidal de la Blache's geography actively sought to bring man-made, economic conditions and natural geographical features into relation through comparative human geography, articulating the role of human intervention in the natural world and defining life as both spatially contingent, and actively creative:

Following Buffon, Vidal saw in animal domestication the basic model of variation; artificial breeding of plants and animals combined a rational choice of traits and spatial segregation. Civilization produced the order nature lacked. Once segregation was achieved (whether artificially or through successful colonization), regulatory demographic mechanisms took over. Although based on a pathos of broken harmony, this doctrine entailed pragmatic and hopeful consequences: living beings could be improved by ameliorating milieux, and this constituted the purest civilizing activity.³³⁹

Planning, then, could be a civilizing activity, operating at the level of biopower – a conflation of environmental evolution with cultural development. Vidal de la Blache's *milieux* reflect a deeply bio-environmental rationality, in the sense that geographic distribution itself had a distinct role in the 'evolution of culture', but also a certain anthropocentricity, with man as the fundamental protagonist, organising and improving upon the environment, as well as other organisms. Rabinow notes the influence of the naturalist and mathematician Buffon, but we might also compare this line of

³³⁸ Paul Vidal De La Blache, *Principles of Human Geography*, edited by Emmanuel De Martonne, trans. Millicent Todd Bingham, PhD, (London: Constable Publishers, 1952) 164.

³³⁹ Rabinow, *French Modern*, 195-196.

thinking to that of Jean-Baptiste Lamarck, whose notion of the milieu invoked a hostile imbalance between organism and environment, against which the creative organism must prevail. Evolution would thus be the product of a kind of teleological struggle by the organism within and against its milieu. As George Canguilhem put it:

Adaptation is a renewed effort by life to continue to 'stick' to an indifferent milieu. Since it is the result of an effort, adaptation is thus neither harmonious nor providential; it is gained and never guaranteed. Lamarckism is not mechanist, and it would also be inaccurate to call it finalistic. In reality, it is a bare vitalism. There is an originality in life for which the milieu does not account and which it ignores.³⁴⁰

In this picture of struggle, it is always the organism and its vitality that are both responsive and responsible for the development of the milieu. We should also note Lamarck's well-known evolutionary doctrine, in which the acquired characteristics of organisms (which they gain through their own creativity and vitality) can be passed on to an organism's offspring. This theory was particularly seductive for human geographers and regionalist planners at the turn of the century, who sought a direct biological relation between the population and the built environment – especially one where modifications and interventions (i.e. planning, design) could be understood to have lasting hereditary effects. As the geographers J. A. Campbell and D. N. Livingstone have suggested:

For whereas Darwin regarded the 'relation of organism to organism the most important of all relations', Neo-Lamarckism was quintessentially a physical environmental theory, which by emphasizing direct environmental impress on the generality of local organic populations, [...] afforded a more cogent account of observed variation.³⁴¹

These notions of environmental organisation and control seem to provide another way of understanding how regionalism accommodated something like the idea of the Garden City in the geographic framework. Rather than focusing on the details of the original coherence of Howard's

³⁴⁰ Georges Canguilhem, *Knowledge of Life*, edited by Paola Marrati and Todd Myers, translated by Stefanos Geroulanos and Daniela Ginsburg (New York: Fordham University Press, 2008) 104.

³⁴¹ J. A. Campbell and D. N. Livingstone, 'Neo-Lamarckism and the Development of Geography in the United States and Great Britain', *Transactions of the Institute of British Geographers, New Series*, Vol. 8, No. 3 (1983) 268.

diagrammatic ideal, regionalist commentators such as Lewis Mumford praised the ‘essential biological criteria of dynamic equilibrium and organic balance’:

...balance as between city and country in a larger ecological pattern, and balance between the varied functions of the city: above all, balance through the positive control of growth in the limitation in area, number, and density of occupation, and the practice of reproduction (colonization) when the community was threatened by such an undue increase in size as would lead only to lapse in function. If the city was to maintain its life-maintaining functions for its inhabitants, it must in its own right exhibit the organic self-control and self-containment of any other organism.³⁴²

For the regionalist, then, the value of the Garden City was to be found in the planner’s design of a way of life that would cultivate and balance biological transactions between organism and environment. The social and financial specifications of Garden City doctrine could also be subsumed under the principles of organic functional relation. This kind of developmentality of ‘life-maintaining functions’, which was perhaps only implicit in earlier reforms, was now part of the explicit agenda of the regionalist interpretation. Indeed, these ideas were central to immediate post-war planning in Britain, interpreted by Patrick Abercrombie and J.H. Forshaw in their *County of London Plan* (1943).³⁴³ What one sees in this plan and the subsequent *Greater London Plan* of 1944 are not a vast pattern of radial Garden Cities and Garden Suburbs emerging out of the destruction of WWII, but rather a bio-regionalist topography, in which the city appears as a milieu of organic structures, organised by function and geographic relation.³⁴⁴ With the completion of the County plan in 1943, J.H. Forshaw announced to the British public in a Ministry of Information film: ‘Here in this book is a plan for the County of London. It isn’t a hard and fast blueprint. Our plan is an idea. A plan for something that is living, something that is growing.’³⁴⁵

³⁴² Mumford, *The City in History*, 587.

³⁴³ Patrick Abercrombie and J.H. Forshaw, *The County of London Plan 1943* (London: Macmillan and Company Ltd.) 1943.

³⁴⁴ Patrick Abercrombie, *Greater London Plan* (London: University of London) 1944.

³⁴⁵ J.H. Forshaw, in the film ‘The Proud City: A Plan for London’ (London: Ministry of Information) 1944.

For the regionalist, planning was now a matter of understanding and shaping an evolving organic milieu defined by human activity and its relationship to the environment, rather than predetermined jurisdictions. In order to establish principles of equilibrium within the urban environment and to produce a meaningful plan required a comprehensive analysis that was no longer trained on the isolation of a specific urban phenomenon, nor on the realisation of a model settlement, but actually on the detailed description of biological and social functions, their historical contexts, and their future trajectories. If the sanitarians had tended to the problem of growth as a pathological condition, and the Garden City had proposed the designed settlement as a therapeutic solution, the regionalist sought to understand growth as an ecological condition of human geography that could be providentially shaped by informed analysis.

Conurbations

Abercrombie and Forshaw's *County of London Plan*, included a series of comparative maps reminiscent of Vidal De La Blache, depicting the geographical distribution of roads, communities, zones, and functions. Monuments and landmarks have all but disappeared in these maps, overtaken by the physiological milieu of infrastructural systems. The map of 'Social and Functional Analysis' in particular illustrates a distinctly regionalist notion of London being composed from the growing-together of distinct village formations, established over centuries of development. In the map, Greater London appears diagrammed as a collection of independent modules, or cells, packed together, eventually establishing the shape of the metropolis as an intra-cellular system, or as Reclus had called it in 1905, 'a collective organism'.³⁴⁶

³⁴⁶ Reclus continues: 'Each cell seeks to develop in perfect health as is necessary for the health of the whole.' Translated in Clark and Martin, *Anarchy, Geography, Modernity*, 193. Originally appears in Elisee Reclus, 'The History of Cities', *L'Homme et le Terre vol 5* (Paris: Librairie Universelle, 1905-8) 335-76.



Fig. 13: Arthur Ling and D.K. Johnson, 'London: Social & Functional Analysis' map from the *County of London Plan* (1943).

This process of 'growing together' and the legibility of a tissue of villages beneath modern infrastructure made legible by the map was a strategic adaptation of an idea that had already been introduced into planning lexicon by Geddes with the notion of 'conurbation':

Constellations we cannot call them: but 'conurbations' may perhaps be a necessary word. At any rate the idea is clear that Lancashire for instance is no longer clearly to be thought of as containing the separate and detached towns, whose names we learned at school and still employ. These are now the elements of a far larger City-Region, of which Liverpool is the port, and Manchester the market, of which Oldham and the many other factory districts are the workshop, and so on.³⁴⁷

In mapping the social and functional distribution of London, Abercrombie had applied the same logic of the conurbation, scaling it down to a village-city ratio. The implications were the same: within this geographical context, the notion of conurbation emerges as a narrative and spatial link between traditional assumptions of city form and the 'urban condition' as such. Regionalism explicitly described an idea of the urban that was simultaneously more empirical in terms of its spatial analysis and also

³⁴⁷ Geddes, *City Surveys for Town Planning*, 8.

more theoretical in terms of its interpretations. Notions like ‘conurbation’ allowed planning to acknowledge the artefacts of urban growth while simultaneously asserting an overall bio-environmental logic to its spaces. The region and its conurbations could now be measured explicitly in terms of their organisational milieu.

The concept of conurbation is in many ways exemplary of the implications of the regional argument, and concisely reflected the new scale of inquiry and the change in perspective that the region demanded. As Vidal de la Blache wrote, ‘In the study of relations between earth and man the perspective has changed. We are looking at them from a greater distance.’³⁴⁸ Importantly though, it was also a perspective that could be used to express the specific position of planning in relation to other practices. As Geddes observed:

Even in the town planning movement this enlarged way of looking at our enlarging cities is not nearly common enough. The architect is accustomed to single buildings, or to street plans at most; the city engineer is accustomed to streets or to street-quarters at most; and both are reluctant to enlarge their vision.³⁴⁹

By linking geographical technique to site planning and design, town planning began to redefine the very terminology and frame of reference in urban discourse.

The Natural History of Urbanisation

‘If we would be city builders we must first of all be archaeologist-historians.’
– Patrick Geddes³⁵⁰

The expanded spatial dimension in planning was complimented by an equally extensive temporal shift in the regionalist framework. As a matter of course, books on town planning began to include a chapter (or chapters) on Greek and Roman settlements, and the medieval and the renaissance village. Planning bibliographies recommended anachronistic volumes on ‘Ancient Town Planning’ or ‘Medieval Town Planning’, as if to suggest that the

³⁴⁸ Paul Vidal De La Blache, *Principles of Human Geography*, edited by Emmanuel De Martonne, translated by Millicent Todd Bingham, PhD (London: Constable Publishers, 1918/1952), 11.

³⁴⁹ *Ibid.*, 9.

³⁵⁰ Patrick Geddes, ‘The Valley in the Town’, *The Survey*, (July 1, 1925) 396.

nascent profession was merely the historical elaboration of timeless principles.³⁵¹ This was equally true of planning methodology, where the regional survey invariably included a local cultural and natural history. Following the historical lessons of the valley section and the evolutionary implications of the conurbation, the narrative of time became central to regional and strategic view of the planner. As C.C. Fagg and G.E. Hutchings wrote in their *Introduction to Regional Surveying*, ‘The roots of the future are in the past and the life of the region as we see it...presents a mosaic of survivals and developments from the past together with incipient tendencies foreshadowing the future.’³⁵² Thomas Osborne and Nikolas Rose have argued that this notion of survey was distinct from earlier iterations, noting that, whereas the earlier social survey of Charles Booth ‘in effect froze time’, the spatial strategies of someone like Patrick Geddes actually ‘sought to open it out to the future’.³⁵³

Regionalism would open out to the future by extending deep into the past, bringing together an analysis that included the familiar cultural epochs, political regimes and architectural styles of human history, but also the timescales of biological evolution, archaeology and geology. Importantly, this historical opening up was simultaneously a way to introduce the biological principle of evolution into planning discourse, while also challenging the short-term goals and operational frameworks of urban reform and its subservience to the norms of political economy. Indeed, the history of the region was a natural history, but also a strategic argument, deployed against the logic of the urban. Patrick Geddes described it accordingly, introducing his now famous ‘technic’ neologisms:

³⁵¹ At the end of C.B. Purdom’s *Town Theory and Practice* (1921) there is a short bibliography, which includes: F. Haverfield, *Ancient Town Planning* (London, 1913); T.F. Tout, *Medieval Town Planning* (London, 1917). [C.B. Purdom (Ed.), *Town Theory and Practice* (London: Benn Brothers) 1921.]

³⁵² C.C. Fagg and G.E. Hutchings, *Introduction to Regional Surveying* (Cambridge: Cambridge University Press, 1930) 107. Quoted in David Matless, ‘Regional Surveys and Local Knowledges: The Geographical Imagination in Britain, 1918-39’, *Transactions of the Institute of British Geographers, New Series* (Vol. 17, No. 4, 1992) 468.

³⁵³ Osborne and Rose, ‘Spatial phenomenotechnics’, 220.

Our own advance from a lower industrial civilization towards a higher thus no less demands definite characterisation, and this may be broadly expressed as from an earlier or *Paleotechnic* phase, towards a later or more advanced *Neotechnic* one. If definition be needed, this may be broadly given as from a comparatively crude and wasteful technic age, characterised by coal, steam, and cheap machine products, and a corresponding quantitative ideal of 'progress of wealth and population'—towards a finer civilisation, characterised by the wider command, yet greater economy of natural energies, by the predominance of electricity, and by the increasing victory of an ideal of qualitative progress, expressed in terms of skill and art, of hygiene and education, of social polity, etc.³⁵⁴

There are clearly values attached to these temporal markers, a criticism of the contemporary urban condition and an appeal to a more enlightened (near) future. Lewis Mumford expanded upon Geddes' terms in a number of his texts. Describing the paleotechnic phase as synonymous with Charles Dickens' 'Coketown', Mumford laments that in the crisis of the nineteenth century city there 'was a chance to build on firm foundation and make a fresh start' but this opportunity was wasted, abdicated for mere technical fixes:

Except for utilities such as gas mains, water pipes, and sanitary equipment, often belatedly introduced, often slipshod and inadequate, the industrial city could claim no important improvements over the seventeenth century town. Indeed, the most wealthy and 'progressive' metropolises often denied themselves elementary necessities of life like light and air that even backward villages still possessed. Until 1838 neither Manchester nor Birmingham even functioned politically as incorporated boroughs: they were man-heaps, machine-warrens, not organs of human association.³⁵⁵

Such descriptions, which appear frequently in the work of both Geddes and Mumford, served as illustrations of the difference between 'progress' and 'development'. The paleotechnic and the neotechnic were deployed as a critique of progress, demanding reform, not solely on the basis of moral outrage or even economic calculation, but on a kind of geohistorical and biological criteria. It was unmistakably a recalibration of the terms of

³⁵⁴ Geddes, 'Civics as Applied Sociology, Part II', *Sociological Papers, Vol II*, 107.

³⁵⁵ Mumford, *The Culture of Cities*, 144-145, 148.

the normal and the pathological as evolutionary principles.³⁵⁶ By way of a narrative theorisation of the emergence of technical culture (and a novel reassessment of the notion of the industrial revolution, at that) planners no longer found themselves beholden to an immediate epidemic but rather with a choice: that of a continuation of degeneration and waste or a positivist path towards scientific social and biological balance. In Geddes' formulation, the move towards neotechnics would not only signal the era of 'greater economy of natural energies', it would also mean the turn towards planning as a neotechnical practice. In short, development required a spatial practice on a par with other technical advances:

Again, under the paleotechnic order the working man, misdirected as he is like all the rest of us by his traditional education towards money wages, instead of Vital Budget, has never yet had an adequate house, seldom more than half of what would be a decent one. But as the neotechnic order comes in - its skill directed by life towards life, and for life - he, the working man, ... will set his mind towards house-building and Town Planning, even towards city design; and all these upon a scale to rival, nay surpass, the past glories of history.³⁵⁷

Here, the future is also suffused with evolutionary teleology: civilisation is destined to rise above the filth and degradation of paleotechnics and evolve through town planning towards a neotechnic future. Such a scenario implicitly relies on a Neo-Lamarckian account of evolution in which environmental intervention ('directed by life towards life, for life', as Geddes says) will ultimately produce what Mumford called a biotechnics.³⁵⁸ Furthermore, the notion of hygiene is not merely relegated to a lesser priority as the idea of an evolutionary spatial principle emerges, rather it integrated into the ontology of the neotechnic order: the hygiene of evolution is spatialised, introducing a positive eugenics, as Geddes advocated: 'For the struggle for existence ... is not only an intra-civic but an inter-civic process; and if so, ameliorative selection, now clearly sought for the individuals in

³⁵⁶ It was also a recapitulation of Comte's epistemology of human knowledge – from theological, to metaphysical, to scientific – in evolutionary terminology.

³⁵⁷ Patrick Geddes, 'The Twofold Aspect of the Industrial Age: Paleotechnic and Neotechnic', *The Town Planning Review*, Vol. 3, No. 3 (Oct., 1912), 181.

³⁵⁸ Mumford mentions 'biotechnics' in earlier publications but fully develops the concept in: Lewis Mumford, *The Myth of the Machine (Vol. II): The Pentagon of Power* (New York: Harcourt Brace Jovanovich) 1970.

detail as eugenics, is inseparable from a corresponding civic art – a literal “Eupolitogenics.”³⁵⁹ In other words, if eugenics sought an ‘ameliorative selection’ of individuals in the population, then neotechnic planning would achieve the same for society at the level of the city and the region, selecting and amplifying hygienic technical and environmental qualities such as housing, sanitation, and urban design.³⁶⁰ Planning then, is not the literary production of utopias, but the biological production of what Geddes called ‘eutopia’:

Thus appears that harmony of individual and social claims, of citizen and citizenship, already outlined; and above all that sociological conception of the City as, in a very real sense, a natural, i.e., an evolutionary growth, which makes each civic Eutopia a rational forecast, and its realisation, however partial in our time, a worthy and immediate aim.³⁶¹

III. The Production of Outlook

At this point we might ask, what are the implications of a discipline that claims not only the city but the region and geography itself as its domain of expertise; a field that takes the whole of natural history as a meaningful context in which to address the concerns of industrial urbanism at the turn of the twentieth century? The sheer scale of inquiry and its framing within an evolutionary schema suggests an epistemic project. Geddes recognised this connection between the problem of scale and the order of thought, writing in 1911 that:

Nowadays, indeed, around our greater cities, populations are outrunning parliamentary boundaries altogether; and thus not only for Greater London, but for more cities than we commonly realize, a revision is necessary, and this not merely of our parliamentary boundaries but of the whole order of thinking to which they belong.³⁶²

³⁵⁹ Patrick Geddes, ‘Civics: As Applied Sociology’, *Sociological Papers* (London: Macmillan and Co., 1905) 104.

³⁶⁰ In evolutionary language, ‘eugenics’ and ‘eupolitogenics’ articulates quite clearly what Foucault later categorised as the anatomopolitical and biopolitical binaries of biopower.

³⁶¹ Patrick Geddes, *A suggested Plan for a Civic Museum (or Civic Exhibition) and Its Associated Studies* (London: Macmillan & Co., Ltd., 1907) 228.

³⁶² Geddes, ‘City Surveys for Town Planning’, 3.

Indeed, with regionalism, we see a renewed effort by planning to realise Comte's vision of a positivist science of the social based on biological principles as the final stage (or as Geddes would have it, the neotechnic stage) in the development of human knowledge. To be fully realised, this scientific episteme could not be limited to the study of city centres or even isolated regions – it implicitly demanded a comprehensive analysis: growth and development were seen to be regional biological processes in which the city was but one factor in a complex geography.

Planetary Urbanisation

What we might call the local 'environmentalisation' of the city in regional thought also involved an inverse operation, by which the total urbanisation of the globe becomes a logical possibility.³⁶³ In challenging the conventional jurisdictions of town and country, the regional framework was also inflected with a legible anxiety of totalisation. Reclus had theorised this notion of a planetary urbanisation as early as 1905 in his text 'The History of Cities':

It cannot be assumed that today's immense agglomerations of structures have reached the greatest expansion imaginable. The truth is quite the contrary.

[...]

We should not be surprised at the imminent development of urban agglomerations of ten to twenty million inhabitants in the lower Thames valley, at the mouth of the Hudson, or in other centres of attraction. Indeed, we should prepare ourselves to accept such phenomena as a normal part of social life. The growth of great foci of attraction cannot be

³⁶³ Andy Merrifield, Neil Brenner, and Christian Schmid all credit Henri Lefebvre with the concept of planetary urbanisation. Lefebvre has indeed described the urban as a totalising event, particular to industrial society, calling it a 'process of domination' over other forms, such as nature, or the rural. For Lefebvre, the urban is a potentially endless process, and the logic of its growth and development is the total urbanisation of the globe. It is only from this hypothetical limit that we can work backwards, to understand both its process and its meaning in contemporary society. [Lefebvre, *The Urban Revolution*, 2.] As Schmid puts it succinctly, 'Today's reality can no longer be grasped using the categories of "city" and "country" but must be analysed using the concept of urban society.' However, what I am arguing here is that the idea of planetary urbanisation is a fundamental assumption of the town planning discourse from the very beginning, as part of its world-view and its knowledge power. [Christian Schmid, 'Networks, Borders, Differences: Towards A Theory of the Urban', in Neil Brenner (ed.), *Implosions/Explosions: Towards a Study of Planetary Urbanization* (Berlin: Jovis, 2014) 69.]

checked until the time at which an equilibrium is established between the force of attraction of the various centres on the inhabitants of the intermediate spaces. But the movement will certainly not stop then. It will be transformed more and more into a constant exchange between cities of population, a phenomenon that can already be observed, and which can be compared to the circulation of the blood in the human body. There is no doubt that this new mode of functioning will give birth to new organisms, and cities, which have already been renewed so many times, will be reborn again with a new character that will correspond to the whole of social and economic evolution.³⁶⁴

The projection of a new ‘social and economic evolution’ in which conurbations are in constant contact as in the circulatory system of a single organism is one that seems to call out for a comprehensive and regulatory geography of planning, one prepared to deal with the whole organism, and not merely with a few of its isolated symptoms. The prospect of planetary urbanisation was not only the observable fact of a regional perspective, it was the very problem upon which regional planning sought to operate: to reign-in, control, but also adapt urbanisation in a global context. As I have shown, Geddes provided the tools and the context through which to apply this global perspective to a set of observational methods for planning, but integral to this was not only the inculcation of techniques, but also of a certain approach, or mentality, so to speak, that could capture this new urban world. And this is why Geddes calls into question ‘the whole order of thinking’ under which cities such as London were governed. Here, with the idea of the survey and the valley section, the conurbation and its potentially endless reproduction, we can also begin to see how planning could be theorised precisely as a question of perspective, and the stitching together of the world through spatial frameworks. This is what Geddes called ‘Outlook’.

Outlook was the quality of knowledge produced by survey – a quality that had a double role within regional planning. The first was to form in the mind of the planner a clear synoptic vision of the site and the necessary form of intervention. However, equally important was the transmission of this knowledge to the wider population, who, by experiencing outlook, would become citizens, in a cosmopolitan sense. Whether through actually travelling to a high point to bear witness to the regional unfolding, or through

³⁶⁴ Reclus, ‘The History of Cities’, 198-199.

didactic materials and description, a new form of vision was to be created in the mind of the citizen-viewer. As Geddes' long time collaborator Victor Branford put it, '[the] panorama is Geography'.³⁶⁵ Outlook was an outcome of surveying, suggesting the privileged standpoint from which all the myriad geo-historical factors of the region could be grasped in a synoptic view.

Branford wrote of his survey of the town of Hastings in 1924:

We see Hastings and its Region as our own particular bit of the world; our precious and intimate sample of its fathomless realities. Hastings in the World, the World in Hastings – that might stand for the motto of our Regional, or Civic, Survey ... our aim ... is to see and know and feel the World in detail, without losing sight of the whole, and without losing grip of its meaning for Man.³⁶⁶

David Matless reflects on this passage, writing that:

This notion of locality as microcosm was crucial in enabling a geographical vision of unity in diversity, with all places unique yet bound together in the categories followed by the survey. To be a local citizen, with local knowledge, was in this scheme not to assert a local independence and a fragmentation of the spatial order, but to be at once a local, national and world citizen, a participating part of a scheme both close at hand and out of reach.³⁶⁷

Exhibiting the World

The production of outlook was, for Geddes, the very basis of civic identity, a kind of spatial subjectivity that embodied 'applied sociology', as he put it.³⁶⁸ Physical survey, historical study, and sociological analysis were all integral to the production of outlook, however, equally important was the consultation and production of maps, photographs, diagrams, and exhibitions. This latter category of the exhibition was particularly important in this context as it was both a crystallisation of the planners' work on par with the survey monograph, as well as a re-presentation of the knowledge-world through which a viewer might experience as closely as possible the planner's 'outlook'. As Matless suggests, the survey method itself was a kind

³⁶⁵ Victor Branford, 'A view of Hastings', *Observation I* (October, 1924) 34. Quoted in Matless, 'Regional Surveys and Local Knowledges', 468.

³⁶⁶ Matless, *Regional Surveys and Local Knowledges*, 475.

³⁶⁷ *Ibid.*

³⁶⁸ Geddes, 'Civics: As Applied Sociology', 1905.

of exhibition practice that, 'produces locality as 'home-picture', as an annotated exhibition of where you are in the world.³⁶⁹

In 1892, in Edinburgh, Patrick Geddes had created what he called the Outlook Tower, an exhibition inside a former observatory on the Royal Mile in Edinburgh that would guide visitors through a series of levels, each corresponding to a different scale of spatial and geographic consciousness. In *Cities in Evolution* Geddes describes the tower from the top down, beginning with the scenic overlook and the view of the street through a camera obscura (installed at the top of the tower by previous owners).³⁷⁰ The 'prospect' directly below provided 'the analysis of the outlook in its various aspects astronomic and topographical, geological and meteorological, botanical and zoological, anthropological and archæologic, historical and economic, and so on.'³⁷¹ In subsequent levels descending towards the ground floor, Geddes mounted exhibitions pertaining to the city of Edinburgh, then Scotland in the regional view, then the English speaking world, followed by the European continent, and finally the whole world – at which point the viewer found themselves back out on the Royal Mile.

Although descending towards the earth, this account of the Outlook Tower also created in the mind of the viewer an ascent towards an ever more broad and inclusive view. At both the top and the bottom, the Outlook Tower returns to a confrontation with the city itself – a local, regional, and global view that always ends in the place where it started. In this sense the exhibition also oscillated between the panorama of the real and the geographic of the exhibition. The viewer was invited to see themselves reflected as simultaneously extremely finite and local figures, as well as nearly boundless planetary viewers. The premise of outlook was that this experience could engender a new kind of civic consciousness, imbued with a notion of the sublime but grounded in scientific analysis.

³⁶⁹ Matless, 'Regional Surveys and Local Knowledges', 477.

³⁷⁰ A diagram and description of Outlook tower can be found on pages 321-325 in Geddes, *Cities in Evolution*, 1915.

³⁷¹ *Ibid.*, 323.

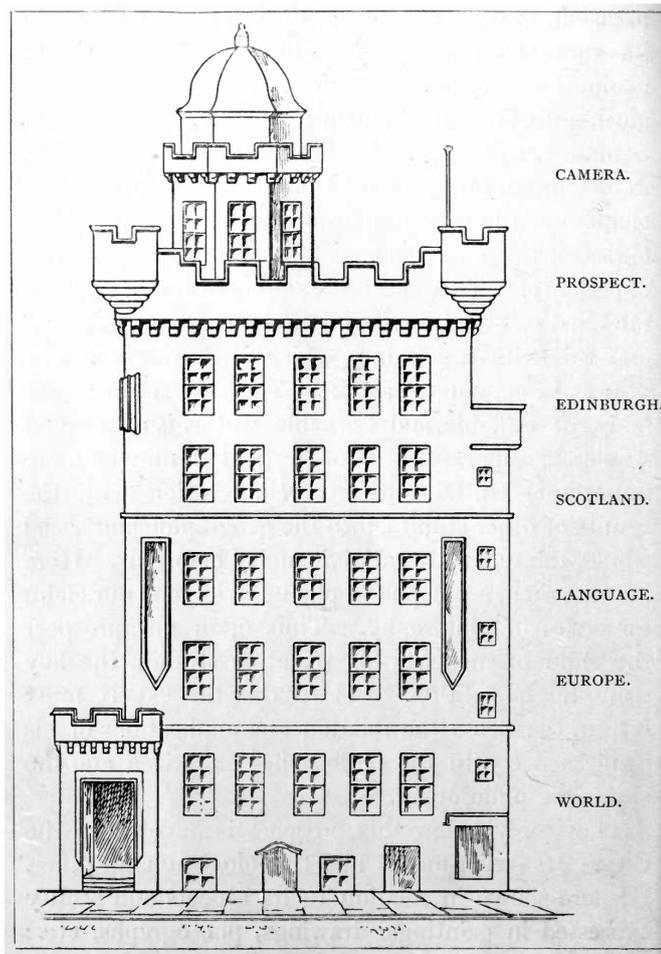


Fig. 14: The Outlook Tower, from *Cities in Evolution* (1915).

In this endeavour, Geddes was again closely linked with the work of the geographer Reclus, who had tried to inspire a kind of ‘outlook’ by perhaps more abstract means. Around the same time as the Outlook Tower, Reclus began to pursue the construction of a scale model of the Earth for the 1900 Paris International Exposition. Initially, he projected a plan for a globe at the scale of 1:100,000, making it a 420ft diameter structure – 7 times the diameter of its most significant predecessor, James Wyld’s Great Globe of 1851, which had been installed in Leicester Square during the Great Exhibition.³⁷² Although Reclus’ ‘great globe’ turned out to be prohibitively expensive (even when proposed at a smaller scale) the concept was similar to Geddes’ Outlook Tower, in that Reclus designed it to be a standing geography lesson – both supremely monumental but comprehensible in its entirety as a kind of didactic physical experience of the Earth. Reclus’ globe was to be

³⁷² G.S. Dunbar, ‘Elisée Reclus and the great globe’, *Scottish Geographical Magazine* (90:1, 1974) 57-66.

viewed from a spiral staircase mounted around the outside of the sphere, in effect creating an orbital perspective. In a sense it was a cosmonaut's view from outer space before the possibility of space travel. But just as the International Space Station now spends most of its time looking back at Earth rather than out into the cosmos, so too was Reclus' globe meant to elicit an attentive and reflective gaze upon the Earth. This monumental simulation was not necessarily a pacifying or pastoral view – rather, it was designed to impart a vertiginous complexity, showing both the limited scope of human life, and its outsized impact on the Earth. This orientation measured the world in order to know it, perhaps, but also to give shape to the anxiety of humanity's changing relationship to the Earth.

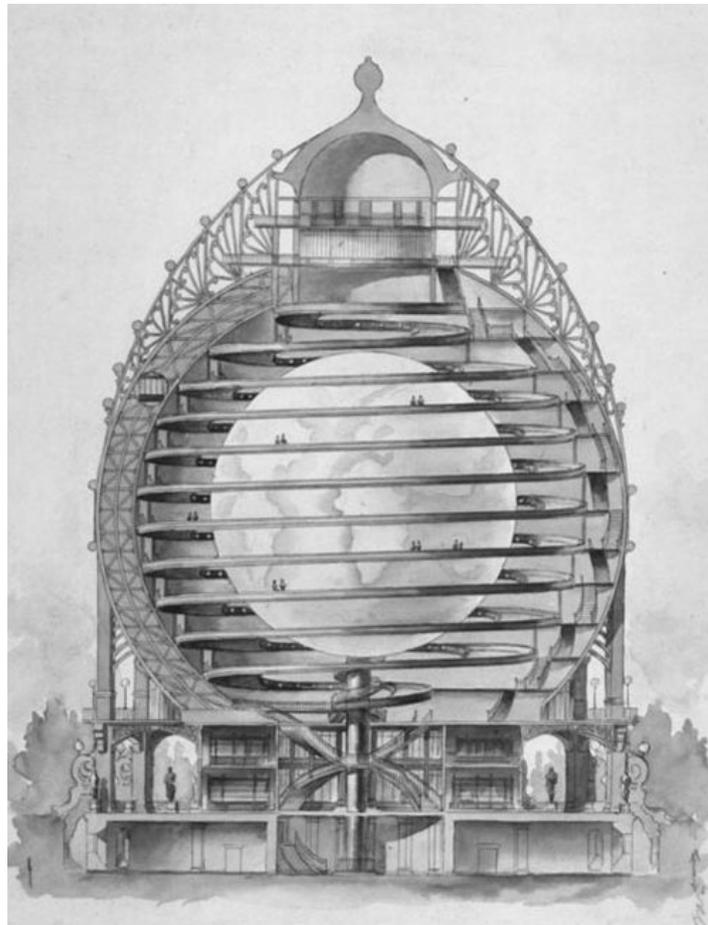


Fig. 15: Illustration of Elisée Reclus' proposal for 1900 Universal Exposition by Louis Bonnier.

Bruno Latour has argued that this modern orbital and placeless view of objectivity has conjured a deeply alienating and unliveable world: 'The Moderns have no place, no topos, no locus to sit and stay. The view from

nowhere, so prevalent in the old scientific imagination, also means that there is nowhere for those who hold it to realistically reside.³⁷³ Here he is affirming the view of Peter Sloterdijk, whose notion of globalisation insists that, ‘Where modern, positional-spatial thought gains the upper hand, humans can no longer remain at home in their traditional world interiors and the phantasmal extensions and roundings-off of those interiors. They no longer dwell exclusively beneath their home-centred sky.’³⁷⁴ And yet, neither Geddes nor Reclus seem to share this sense of uncertainty and dislocation in their deployment of ‘outlook’ or the sphere of the Earth as a didactic performance. Rather, as the inscription in the first volume of Reclus’ famous text *L’homme et la Terre* (1905) reads: ‘*l’homme est la nature prenant conscience d’elle-même*’ (Man is nature becoming aware of itself).³⁷⁵ As opposed to alienation, regionalism suggested that such a view would produce self-knowledge for a society in which human activity was understood to be increasingly environmental and indeed, global. The expansive consciousness of an immanent local-planetary citizenship was not about achieving an exodus from one’s world interior, but rather of developing it along bioregional principles.

Although the ‘production of outlook’ as a theoretical and didactic practice seems to be at a distance from the practical realities of urban regulation, these exercises in regional thinking were more than works of abstract theory. Geddes’ Outlook Tower and Reclus’ great globe signalled a key shift in the scope of early twentieth century planning, towards the cultivation of a new kind of engagement of the population as participatory citizens. As we have seen with the enumeration of regional techniques and concepts, knowledge production was seen to be an essential component of the production of planning – both as survey and as exhibition. And here, the exhibition is not explicitly understood as a form of propaganda or merely a

³⁷³ Bruno Latour, ‘Spheres And Networks: Two Ways To Reinterpret Globalization’, *Harvard Design Magazine* (30, Spring/Summer, 2009) 141.

³⁷⁴ Peter Sloterdijk, ‘Globe Time, World Picture Time’, *In the World Interior of Capital: Towards a Philosophical Theory of Globalization*, translated by Wieland Hoban (London: Polity Press, 2013) 27.

³⁷⁵ Elisée Reclus, *L’homme et la Terre, volume I* (Paris: Librairie Universelle, 1905) i.

formality of political consent, but as an invitation into the production of a kind of collective sociology of space. The perambulatory, visual, informational and reflective space of the exhibition was not only designed to present information, but in a sense, to recreate the process of survey by planners for citizens. By visiting these exhibitions, viewers were also taking part, or ‘tracing the path’, in the production of planning knowledge, which seemed to call for some semblance of what we would now call ‘consultation’.³⁷⁶

In this way, exhibitions became an integral component of planning in the first half of the twentieth century. Geddes’ exemplary ‘Survey of Edinburgh’ was given particular importance at the Royal Institute of British Architects’ Town Planning Conference and Exhibition in 1910 where it occupied an entire gallery of the Royal Academy.³⁷⁷ This led to the formation of a committee of eminent planning advocates who helped Geddes to develop a travelling exhibition called the ‘Cities and Town Planning Exhibition’, which toured Europe for another three years.³⁷⁸ Subsequently, RIBA also mounted a significant exhibition of the ‘Civic Survey of Greater London’ in its galleries in 1920, a project that had taken four years to develop, employing

³⁷⁶ Peter Larkham and Keith Lilley have also pointed this out in the context of post-war planning exhibitions, but they are sceptical of the participatory dimension: ‘Patrick Geddes (an early proponent of planning-related exhibitions) and [Misha] Black saw the exhibition broadly as an exercise in public *consultation* – but that this was a consultation that hinged on a flow of information from exhibitor to onlooker by means of engagement and involvement via a “space” of display that was the exhibition.’ [Peter J. Larkham and Keith D. Lilley, ‘Exhibiting the city: planning ideas and public involvement in wartime and early post-war Britain’, *Town Planning Review* (83: 6, 2012) 652.]

³⁷⁷ William Whyte, ‘Introduction’, *The Transactions of the Royal Institute of British Architects Town Planning Conference, London, 10–15 October 1910* (London: Routledge, 2011) viii.

³⁷⁸ For extensive documentation of this project, see Pierre Chabard, ‘Competing Scales in Transnational Networks: The Impossible Travel of Patrick Geddes’s Cities Exhibition to America, 1911–1913’, *Urban History* (Special Issue 2, Volume 36, 2009) 202–22. For an example of the many exhibition catalogues produced for the exhibition, see: Patrick Geddes and F. C. Mears, *Cities And Town Planning Exhibition, Guide-Book and Outline Catalogue* (Dublin: Browne And Nolan, Limited) 1911.

over eighty architects and planners, and resulting in around three hundred maps and diagrams.³⁷⁹

It is with this precedent that Abercrombie and Forshaw's *County of London Plan* was presented to the British public in anticipation of post-war reconstruction not as a 'hard and fast blueprint' but rather as an accumulation of spatial knowledge – an 'outlook' – available for consultation and interpretation. The London County Council exhibition of the plan at County Hall and later at the Royal Academy, as well as RIBA's London Regional Reconstruction Committee exhibition at the National Gallery (both in 1943) made visual projections of comprehensive reconstruction that not only advocated the idea of planning by government agency, they also solicited the approval and the participation of the public in the co-production of its vision. More than the isolated map or policy document, the presentation of plans, maps, models, and reports was a mode of display that made 'society transparent to itself' as theorist Tony Bennett puts it.³⁸⁰ The implicit invitation to participate in the past, present, and future of Britain was first and foremost an invitation to understand and recognise the narrative as one's own.³⁸¹

Of course, we should be sceptical as to what extent exhibition practices are indeed 'participatory' in the strong sense, and recent scholarship has

³⁷⁹ Lucy E. Hewitt, 'The Civic Survey of Greater London: social mapping, planners and urban space in the early twentieth century', *Journal of Historical Geography* (38, 2012) 262.

³⁸⁰ Tony Bennett, *The Birth of the Museum: History, Theory, Politics* (London: Routledge, 1995) 48-50.

³⁸¹ The Festival of Britain in 1951 also contained a significant planning component, including the presentation of the Lansbury Estate. As Barry Curtis has written, "The Festival invited the British people to look at themselves and in looking, to participate more fully in their collective responsibilities and pleasures. [...] The act of looking at "things you can see and believe" brought into focus not only the objects themselves but, with careful guidance, the processes of planning and design that had ordered them into symbolic, productive and disciplinary forms.' [Barry Curtis, 'One Continuous Interwoven Story (The Festival of Britain)', in *The Block Reader in Visual Culture*, edited by George Robertson (London: Psychology Press, 1996) 210.]

certainly put this into question, but it is nonetheless significant that as the field of planning was itself taking shape as a discipline and as a coherent governmental practice, it also found reason to exhibit and to publicly represent the planning process as an object of experience for the general public. There is a distinct sense in which the scope and ambitions of planning now sought to elicit a new kind of performance from the population; a performance in which their very regulation, by way of the built environment, was not only consensual but internalised by every citizen and understood to be a form of self-regulation. In other words, the production of outlook was also the production of civic identity through knowledge and perspective in a global environmental context – the production of a self-consciously biopolitical subject.

Conclusion

Many of the techniques and claims of early twentieth century regionalism will be familiar, even commonplace for students of architecture and planning today. This is not to say that the regionalist argument is the sole and explicit progenitor of contemporary town planning practice, nor has this been a call to reconsider a more authentic or holistic moment of urbanist history. Rather, what I have tried to show is how the development of town planning at the turn of the century was also in many ways the development of the idea of the urban environment, where the techniques of biopower conceptually merge with an idea of the milieu that is inflected with the politics of both the human and the natural sciences. The shorthand for this interdisciplinary technique is ‘the region’, but the intellectual territory claimed by such a merger is total. In order to claim authority over the urban, town planning claims the entire panorama of geography, as it were, bringing it together with the evolutionary logic of natural history into a synoptic socio-biology of space. We end with the region precisely because it implies the very planet as the territory and scope of the urban.

Although it is never explicitly stated, planning at the turn of the century can be said to have regarded itself as a kind of life science, where the organisation of the living and the non-living could participate in the evolution

of the Earth. To be clear, this is not a wholesale endorsement of urbanisation as a fully autonomous process. Instead, like Comte's distinction between 'progress' and 'development', the conurbation of the world, although beholden to the science of biology, must be regulated, made more perfect by human intervention. In short, it must be governed by the logic of development. Here we might even characterise this in the same terms as modern environmentalism, which is to say that the will to preserve certain natural areas and ecosystems, develop others, attenuate industrial practices, develop others, is not to prevent the growth of the city but to secure its health, and to ensure its development. For this, a new episteme of environmental knowledge became necessary. The visual and spatial techniques, the exhibitions and the rhetoric of regionalism all legitimise intervention, legitimise growth (of a certain kind) and the pastoral guidance of the professional through a programme of description, narration, and transparency. In other words, planning appeared essential to the governance of populations precisely because it was able to make sense of a complex set of historical, spatial, and political questions, organised into a theory about place, space, and evolution that has been both technically useful and politically expedient.

7. CONCLUSION

I. Developmentality Restated

The first task of the thesis has been to provide some kind of extended account of ‘developmentality’ as a biological, hygienic, and positivist mode of spatial governance. By revisiting the history of town planning (and the crisis of the city in the nineteenth century from which it emerged) I have put forward developmentality as a way of understanding the underlying logic of modern planning and the management of the built environment. To accomplish this, my strategy has been to draw on Foucault’s articulation of ‘biopower’ as the basis for an analysis of the specific concerns of the city, and to interpolate this through a series of historical conjunctures where notions of therapeutic and preventative medicine, organicism and organisation, circulation and cultivation come to bear on the organisation of urban space. In other words, developmentality has come to describe the various ways in which the city itself has become a technique of biopower, where the regulation of urban processes and infrastructures have served as a means to govern the growth and development of population.

Developmentality and Biopower

One might question why the idea of developmentality is needed at all, when the terminology of biopower could just as well have been employed to provide a critique of planning. The answer, which perhaps only becomes evident over the course of a number of situated analyses, is that biopower, although useful in identifying the key category of the population and articulating the imbrication of medical science within modern governance, seems to claim too much and say too little within the specific context of this thesis. To elaborate, if I had attempted a renovation of ‘biopower’, in which the term defined a strictly urban political framework, I would have also risked inadvertently ruling out other equally valid domains in which it has served as a useful critical rubric. On the other hand, even if we take Foucault’s fairly limited reflections on the city in terms of biopower as the starting point for

such a position, the concept then seems to fall slightly short of a full account of the problem of 'growth and development' in relation to urban governance. By contrast, 'developmentality' has allowed me to apply, and in some cases even re-define, biopower's constitutive link to nineteenth century urban problems while also extending it to include a more substantive critique of the positivist foundations of urban social sciences. This seems preferable to an argument that results in merely another competing definition for biopower and biopolitics.

One of the implications of this approach is that although it takes its ostensible object to be a history of planning, the thesis does not necessarily produce a definitive account of the profession, as such. To diagram developmentality is to describe the shifting ground of a discursive consensus, rather than the hard and fast rules of planning as an institution. Because of this uneven 'spatialisation' of discourse, it has not made sense to simply narrate the cumulative 'development of developmentality' over the course of history. Rather, my task has been to provide an analysis of successive expressions, formations of knowledge around the question of growth and development as biological, urban, and political problems.

In order to try to bring this to a close, the following chapter will first briefly reflect on the various spatialisations of developmentality explored in the thesis and then go on to suggest further research into the ways in which developmentality can be seen reflected in some of the concepts and fields of contemporary urban discourse.

Spatialisations

The thesis has approached developmentality as a series of distinct formulations – as a field of shifting spatialisations that can be read into the historical emergence of modern planning and urbanisation. As I outlined in the second chapter, this technique explicitly draws on Foucault's description of clinical knowledge from *The Birth of the Clinic*, demonstrating the interpolation of distinct knowledge forms in the creation of what he would

later call an ‘apparatus’ or *dispositif*.³⁸² Although I did not attempt to directly structure the thesis as a sequence of spatialisations, it has been useful to think of developmentality within these terms, as a way of bringing together various material and conceptual strands while at the same time suspending certain teleological or chronological assumptions within the historiography. To make these discursive spaces more explicit, I will briefly review them here.

The first spatialisation of developmentality has been the formation of what we might call a tectonic nomenclature of the normal and the pathological: the hygiene, physiology, and epidemiology of the city as a vector of disease. These descriptive, regulatory classifications around which the city became legible (not unlike a clinical nosology) shaped both the public regard for the city as well as the technical regulatory response. The first spatialisation is where the abstract concepts that shape our understanding of the city are formed, classified, and ordered. This abstract spatialisation of terminology has also been the space of statistical analysis, in which the categories provided by demography, architecture, and medicine converged on the question of the city. In the thesis I tried to show how these conceptual abstractions fundamentally shaped the kind of intervention – and indeed the political status – of the city as an organised, biological environment. The most significant shift in this abstract domain was the movement from the medical nomination of the city as the source of the pathological in the nineteenth century, to the category of the planned city as a therapeutic and restorative solution in the early twentieth. Such a shift signalled the emergence of a new discipline of spatial planning, through which a new pattern of classification emerged, situating the city and urban procedures within a natural history of the environment.

The second significant spatialisation of developmentality has been its intervention into the city itself. First, the investigative practices of medicine and sanitary reform ‘encounter the city’ so to speak, and in doing so, begin to

³⁸² See: Michel Foucault, ‘The Confession of the Flesh’, In *Power/Knowledge Selected Interviews and Other Writings*, edited by Colin Gordon (New York: Pantheon, 1980) 194-228.

formulate the terms through which it becomes intelligible. This, as Foucault points out, is the circulation between the primary and secondary spatialisations.³⁸³ More importantly, it becomes evident that the city is a medium through which population can be governed. Those professionals, experts, trustees of society and culture that have as their object the regulation of population, find that it can be effectively directed and secured by the shaping, planning, and regulation of urban space. To control and enable the means of hygiene, circulation and transport, access to clean water, access to infrastructure, and to housing itself, prove to be an important, even privileged means of governance at the turn of the twentieth century.

What I have tried to argue, especially in the fourth chapter, is that in addressing the ‘crisis of the city’ – to sanitize it and normalise it through policy reform and infrastructure – public health also helped to change the very form of the city, accelerating the systemic, organised reproducibility of the city as itself a unit of infrastructure – producing the distinction we now refer to as the *urban*.³⁸⁴ In this way, the material encounter with the city again transacted directly with the first, conceptual and semantic spatialisation.

The third spatialisation, the space of dialectics and cultural dispersion, is the space of discourse in which ostensibly objective findings of statistical analysis, the technical calculations of sanitary engineering and urban design, have intersected with the political values and social mores that adapt, respond, and shape the meaning and agency of the urban. For example, the ‘household’ cannot be said to have been a biological category of analysis, and yet it has often served as the basic unit of measurement for statistical and epidemiological calculations of the city.

In addition to this intersection of clinical and cultural criteria, we can also see how the third spatialisation has operated as what we might call the ‘ontological’ dimension of developmentality. Perhaps best exemplified in the

³⁸³ Foucault, *The Birth of the Clinic*, 16.

³⁸⁴ Of course, this was also made possible by new technologies and building methods, but these shifts were introduced by way of (and through the logic of) health reform.

emergence of regional planning discourse, it is also the ontological dimension where the urban is provided with a 'reason for being' by way of the narratives of natural history, geography, and biology. In other words, this is the spatialisation of a kind of positivism, in which the conceptual categories of thought and the material practices of reform intersect with the ambitions of social science to produce what is presented by planning advocates as a new science of the city. This ambition still drives the developmentality of planning today.

'Ontology' may seem slightly overstated, connoting a metaphysical condition, but it is precisely this relation to the metaphysical, which Mill described as 'mistaking abstraction for reality', that developmentality seems to exploit.³⁸⁵ In the course of governing the population by way of the city, inspectors, engineers, and planners have each appropriated in their own way the conceptual apparatus of the biological, in a sense taking (and perhaps mis-taking) scientific abstractions as social facts. This discursive operation requires one to will into empirical existence that which is strictly theoretical, propositional, or correlational. This is precisely the political and theoretical quandary of positivism, affording it political agency at the price of a permanent conceptual indeterminacy.

Because developmentality seems to dwell within this indeterminacy – between the steady nosology of a public health practice, the constantly shifting patterns of infrastructural space, and the positivism of a 'science of the city' – it also becomes hard to attribute such a framework exclusively to the domain of state planning departments. Indeed, the claims of developmentality to social science far exceed the narrow remit of contemporary town planning as a discipline. However, even if we see today the profound weakness of state planning, we also see its capitulation to a private sector that is all the more willing to deploy its own liberal developmentality, its own cultivating forces. There is a strong sense in which the trend towards private-public partnerships in master planning and comprehensive urban redevelopment schemes have internalized and

³⁸⁵ Mill, *August Comte and Positivism*, 16.

rationalized the regulatory techniques of biopower and the ontological developmentality of the urban scale. In other words, it is now the private sector, aided and subsidized by government, that takes as its duty the cultivation of growth and development on its own terms.

But even though developmentality does not 'belong' to the orthodoxy of planning per se, it maintains its fundamentally technical and scientific character, deployed by various institutions and disciplines of the built environment. It remains intrinsically linked to the problems and the discourses of biology and its relation to the urban. This is, in part, the logic in my use of Foucault's spatialisations of clinical medicine. Not to say that town planning knowledge has ('actually' or 'finally') achieved the status of a clinical practice, but that it seeks to organise itself through many of the same conceptual and institutional operations, and draws political power from its approximation to those disciplines. It is this continuing approximation that I would like to turn to, in order to indicate where further research might continue to elaborate a contemporary theory of developmentality.

II. Developmentality and the Science of Life

Function and Representation

Observing that developmentality is a kind of positivism in which urbanisation and its attendant governance is propelled by the logic of the life sciences still requires a degree of specificity in order to distinguish it from a mere scientism in contemporary urbanism. The first distinction we might make is to say that developmentality is not primarily a discourse on symbolic or mimetic representations of nature or the natural sciences. I have already tried to be very clear in the thesis that biology and medicine do not enter the discourse on the city as literary metaphors, but rather as active concepts and problem-solving strategies. Far more important than a naturalistic illustration of the city as a simile of nature, the spatialisations of developmentality have produced a form of discourse fundamentally concerned with the measurable, rather than the expressive – with maps, rather than pictures. In this sense,

attention has been consistently drawn to the ways in which the city *functions* or in some sense demonstrates biological processes: growth, development, circulation, evolution, etc. These processes are classified, experimentally verified and disseminated within an increasingly technical and bio-social framework. This is a fundamentally different line of inquiry from a formally defined, representational model of urban design that employs *biomimesis*. In short, we have been interested in what the city does, more so than what it resembles.

I point this out because it seems that discussions of the biological in urban and architectural discourse are quickly derailed by a failure to make this initial distinction. When invoking the ‘bio-’ within the disciplines of the built environment, one is often confronted with a surfeit of diversions into the novelties of biomorphic design principles, many of which have actually served to obfuscate the very spatialisations of power within urban development. Here, the difference between the biological as an aesthetic regime and developmentality as a logic of governance is crucial. In contrast to the mimetic, what we are concerned with are those practices and discourses that continue to shape the urban through an attention to function, process, and organisation. By insisting on this particular trajectory (or genealogy, in Foucauldian terms), I am not trying to disqualify representational design from consideration, but I am turning our attention to those forms that have manifestly contributed to the functionalist, infrastructural urban condition that we are confronted with today.

The Urban Observatory

I have shown throughout the thesis how techniques of scientific measurement and description have directly informed working definitions of the city and its relationship to the question of population. Data visualisation and the ‘physiology’ of the urban are closely linked, and it is precisely through the metrics of growth, hygiene, and environment that a functional naturalism is made possible. This was evident in the central role of statistics and epidemiology in the nineteenth century, and equally true of the geographical and environmental strategies of the early twentieth. By taking

into account more precise and more heterogeneous data, an increasingly high-resolution image of growth and development has become possible, bringing new variables and new spatialisations under the gaze of the normal and the pathological.

As the nomination and measurability of urban phenomena increases, it is no surprise then that we find ourselves in the midst of a renewed contemporary discourse on the ‘science of cities’. For if the motto of the London Statistical Society was *Aliis Exterendum*, then the contemporary proponents of urban ‘complexity’ theories have set out to do just that: to ‘thresh out’, map, and analyse diverse sets of statistical data in pursuit of the hidden order beneath the chaos of contemporary urban experience. As theorist Luis Bettencourt of the Santa Fe Institute has observed, ‘There is no longer much of an excuse to ignore many of the measurable properties of cities. Cities across the globe and through time are now knowable like never before, across many of their dimensions: social, economic, infrastructural and spatial.’³⁸⁶

Although we will look much closer at this notion of ‘complexity’ in a moment, I want to first address this issue of the ‘knowable’ as it relates to the city and urban processes. I should first point out that Bettencourt’s recognition of a multi-dimensional, measurable city of systems was already of central importance to many twentieth century theorists. In addition to the statistical societies, perhaps even more appropriate in this context is Patrick Geddes’ notion of ‘outlook’ that I addressed in chapter six. Geddes was concerned with many of the same properties of cities as Bettencourt, and by drawing together geo-historical, statistical, and biological perspectives into a matrix of spatial knowledge, ‘outlook’ aimed to embody a comprehensive survey of the city – a worldview that served as a kind of shorthand for Geddes’ notion of modern citizenship.

³⁸⁶ Luís Bettencourt, ‘What Kind of Problem a City Is: New Perspectives on the Nature of Cities from Complex Systems Theory’, *SFI Working Paper* (2013-03-008) 5.

In the early 1970s we can see how this idea of a panoramic, information-driven urbanism is again reflected in the work of someone like the designer Richard Saul Wurman (who would go on to create the now ubiquitous TED conferences). In a special edition of *Design Quarterly* from 1971, entitled 'Making the City Observable', Wurman declared that:

Public information should be made public. Information about our urban environment should be made understandable. Architects, planners and designers should commit themselves to making their ideas immediately comprehensible. Making the city observable implies allowing the city to become an environment for learning.³⁸⁷

Wurman's concern for 'making the city observable' can be understood precisely within the terms of the 'threshing out' of data and other forms of technical knowledge related to the city. Wurman was well aware of the nature of the problem, complaining that, 'We talk in numbers we can't comprehend and about sizes we can't visualise. Artists' renderings, rather than measured performances and relationships, are used to explain proposed environmental changes.'³⁸⁸ Wurman has been explicitly engaged in the production of sophisticated articulations of these 'measured performances and relationships', advocating an multi-dimensional understanding of the city through maps, plans, data visualisations, wayfinding and educational games. In the course of communicating these complex realities, Wurman has also envisioned an institution that would be permanently dedicated to the task of making sense of the urban condition – what he has called the 'urban observatory':

The museum of the living city, or the urban observatory, should be the visual data centre of the city and region. [...] In a new kind of museum, the city and its man-made environment with its sociological, economic and political realities should be clearly described to the people living in it. This should be done in a manner allowing everyone to sense the constants of growth and change and the inter-relationships of elements of the community.³⁸⁹

It is clear in this description that what Geddes called the Outlook Tower, Wurman has called the Urban Observatory, and through this

³⁸⁷ Richard Saul Wurman, 'Making the City Observable', *Design Quarterly*, No. 80 (Minneapolis: Walker Art Center, 1971) 6.

³⁸⁸ Wurman, 'Making the City Observable', 6.

³⁸⁹ *Ibid.*, 76.

programmatically edifice, a whole range of concerns can be ordered, distributed, revealed, and explained for the benefit of an ever more urban and participatory citizen-subject.³⁹⁰ This vision of a better – even total – knowledge of the city and society has been expressed repeatedly in the history of sociology, and the form of the museum, the tower, and the observatory offer us a typological series of architectural forms through which to think this synthetic, preeminent view.

Most importantly, the question being posed by projects like Wurman's is that of *legibility*, and the purpose of 'making the city observable' is undoubtedly to make these new surfaces of legibility more widely understood, and thus more amenable to action – for citizens, even tourists, but also planning and governance. In Wurman's own efforts to diffuse a more sophisticated understanding of the city (through Technology, Entertainment, and Design) we also get a glimpse of how modes of visualisation, display, and the spatialisations of technical knowledge continue to drive urban discourse, both in terms of public understanding and techniques of governance. With this we can see that Geddes' Outlook Tower was not simply an oddity, an artefact of the World's Fair era, but rather the expression of a recurring idea within modern planning thought – that of the centrality of visualisation, of comparative multi-disciplinary knowledge, and of the city as a kind of nexus and organisation of that knowledge. I will argue here that new techniques in urban analysis have not only accelerated this impulse to nominate, gather, process, and display urban socio-spatial 'facts', but that this approach continues to rely on a framework of biopolitical developmentality. In a sense, new techniques of complexity have taken the principles of 'outlook' and the 'observatory' as the basis for claims to a new kind of science of the city.

Complexity

'Complexity' is not a disciplinary designation as such but rather a kind of marker for research involving computational analysis and systems theories

³⁹⁰ The web-version of the urban observatory launched in 2015: www.urbanobservatory.org

from a number of cognate fields. Complexity research has applied some of the same theories used in fields such as chaos mathematics, genetics, and stock market analysis to the urban and environmental problems of growth and circulation. For example, issues such as traffic management or crowd control are no longer limited to a consideration of the immediate questions of engineering and policing, rather they are extended to a vast array of statistical variables, sensor data, and geospatial imaging, situating the problem of movement through space as one of non-equilibrium physics, evolutionary instinct, and neurological perception.³⁹¹ Bypassing the conventional categories of analysis, complexity promises to reveal the patterns and pathways of the urban in terms of functional and biological performance, demonstrating a scientific basis for design and planning based on verifiable and repeatable simulations.

Complexity theorists, although carving out a distinct approach to the built environment, are quick to link their efforts to the tradition of town planning, establishing the historical, disciplinary continuity of their work while arguing for its future in the fields of complex data analysis. Theorists such as Luis Bettencourt have linked the very notion of urban complexity to Jane Jacobs, whose advocacy of 'organised complexity' in *The Death and life of Great American Cities* (1961) argued for a nuanced, multi-dimensional approach to urban governance. But as Bettencourt makes clear, the technology-driven complexity he and his colleagues speak of is not directly aimed at the immediate concerns of local policy:

In my view, the challenge of defining *the kind of problem a city is* goes well beyond a principled rejection of the urban renewal planning practices of Jane Jacob's day. [...] What lives on as a challenge is the creation of new and better reconceptualisations of cities as complex adaptive systems (to use more modern language) and the development of a more scientifically grounded practice of urban planning guided by such principles.³⁹²

In Bettencourt's effort to define urban complexity he alludes to another of its distinctive properties, which is that macro-scale complexity

³⁹¹ Philip Ball, 'The March of Reason', *Critical Mass: How One Thing Leads to Another* (New York: Farrar, Strauss and Giroux, 2004) 118-155.

³⁹² Bettencourt, 'What Kind of Problem a City Is', 2.

deals with ‘emergent’ systems, demonstrating properties that are greater than the sum of their parts and evolving without a predetermined goal.³⁹³ As Bettencourt suggests, we are not just dealing with systems, but ‘complex adaptive systems’ in particular. Michael Batty, professor and director of the Centre for Advanced Spatial Analysis at UCL, has drawn this connection explicitly, describing how ‘[the] focus on spatial dynamics and behaviours leads to one of the key concepts in this new theory of cities, one which we refer to as “emergence” and which underpins the idea that multiple decisions from the bottom up often give rise to unexpected, innovative and surprising behaviours.’³⁹⁴ In complexity theory, the notion of emergence is derived from evolutionary biology, but again, like Bettencourt, Batty measures the scientific emphasis of this argument with direct reference to planning history, citing Patrick Geddes as the progenitor of this form of urban analysis.³⁹⁵ With his co-author Stephen Marshall, Batty writes that for Geddes, ‘town planning could be seen as an instrument of evolution’.³⁹⁶ They go on to argue that, ‘Geddes’ social and town planning ideas are rather directly related to how he believed organic evolution actually took place – in a literal rather than metaphorical sense’, thus establishing, or perhaps re-establishing for complexity the conceptual links between the social and the biological, towards ‘an integrated theory of life’.³⁹⁷

In terms of urban discourse, this argument that the urban should be regarded as a complex living environment brings us right back around to Terry Farrell’s recent evocations of the city as a ‘tangled bank’, which I mentioned in my introduction (itself a reference to the final paragraph of Darwin’s *On the Origin of Species*). In the opening chapter of his book *Hidden Order: How Adaptation Builds Complexity*, computer scientist John H. Holland

³⁹³ Michael Batty, ‘Building a Science of Cities’, *Cities*, Volume 29, Supplement 1, March 2012, S12.

³⁹⁴ *Ibid.*, S10.

³⁹⁵ Stephen Marshall and Michael Batty, ‘Life, Evolution, Social Union and the “Great Transition”’ *UCL Working Paper 162* (21 September) 2010; Michael Batty and Stephen Marshall, ‘The evolution of cities: Geddes, Abercrombie and the new physicalism’, *Town Planning Review*, Volume 80, issue 6, 2009: 551–574.

³⁹⁶ Marshall and Batty, ‘Life, Evolution, Social Union’, 2.

³⁹⁷ *Ibid.*, 3.

explains the fundamentals of complexity using the strikingly similar motif of the forest:

We have yet to assay the range of organisms present in a cubic meter of temperate-zone soil, let alone the incredible arrays of species in a tropical forest. Ecosystems are continually in flux and exhibit a wondrous panoply of interactions such as mutualism, parasitism, biological arms races, and mimicry (...). Matter, energy, and information are shunted around in complex cycles. Once again, the whole is more than the sum of its parts.³⁹⁸

Here, we can already see in synoptic terms the logic of complexity research in the urban context: to untangle, articulate, measure, and intervene into the city by means of a scientific, evolutionary discourse. Complexity attempts to make legible new spatialisations of urban knowledge, and in so doing, describe a renewed sense of the developmentality for the urban. Indeed, Batty and Marshall have readily quoted Jose Luis Sert from 1942, declaring that ‘city planning has become obsolete. In its place must be substituted urban biology’, lamenting only that this claim has remained insufficiently developed until the present day.³⁹⁹

Crowd Control

To get at the implications for planning, we might dwell for a moment on this notion of ‘emergence’ and the understanding of the city as an emergent system. Michael Batty provides us with a thorough account in his essay, *Building a Science of Cities*:

Cities do not exist in benign environments and cannot be easily closed from the wider world, they do not automatically return to equilibrium for they are forever changing, indeed they are far-from-equilibrium. Nor are they centrally ordered but evolve mainly from the bottom up as the products of millions of individual and group decisions with only occasional top down centralised action. In short, cities are more like biological than mechanical systems and the rise of the sciences of complexity which has changed the direction of systems theory from top down to bottom up is one that treats such systems as open, based more on the product of evolutionary processes than one of grand design. During the last half century, the image of a city as a ‘machine’ has been replaced by that of ‘organism’ but the origins of these ideas remain firmly embedded in past developments.⁴⁰⁰

³⁹⁸ John H. Holland, *Hidden Order: How Adaptation Builds Complexity*, New York: Basic Books, 1995) 3.

³⁹⁹ Jose Luis Sert, originally in *Time magazine*, 30 November 1942, quoted in Batty and Marshall, ‘The Evolution of Cities’, 551.

⁴⁰⁰ Batty, ‘Building a Science of Cities’, 59.

The emphasis on the open-ended, bottom-up emergence of urban phenomena suggests that the role of complexity theory is to articulate a developmental strategy of observation, measurement, and limited intervention aimed at guiding and cultivating the already existing evolutionary forces of the city. As Bettencourt says, ‘Because of this enormous potential for human development cities should not be seen as systems to be controlled or resisted, but encouraged to evolve spontaneously in the direction of achieving the best open-ended expressions of our collective nature.’⁴⁰¹ This suggests a technical, perhaps supervisory role for planning, averse to any overt notions of control. In *Out of Control: The New Biology of Machines, Social Systems, and the Economic World* (1994) Kevin Kelly famously described the benefits of emergent systems as adaptable, evolvable, resilient, boundless, and novel.⁴⁰² He also identified the ‘apparent disadvantages’ of emergence as its nonoptimal, noncontrollable, nonpredictable, nonunderstandable, and nonimmediate traits.⁴⁰³ However, in the context of urban planning, the utility of complexity research is to be found precisely (and perhaps paradoxically) in these qualities of optimisation, control, prediction, understanding, and immediacy. Indeed this is perhaps a useful definition of contemporary planning principles. The science writer Philip Ball, in his account of computer simulations of walking patterns, sums up the promise of such research, commenting, ‘How much more effective it would be if planners could anticipate the walker’s wishes and build accordingly.’⁴⁰⁴ The paradox seems to emerge from the tension between the ability of complexity theory to produce new forms of legibility, new measurements of the urban, and the normative instrumentalisation of this data for planning. Whereas we might observe that emergent systems are open-ended, unpredictable, and organic by their nature, it is precisely the will to plan that requires some ability to demystify these properties. Kelly quips that, ‘Emergent novelty in a video game is tremendous fun; emergent novelty

⁴⁰¹ Bettencourt, ‘The Kind of Problem at City Is’, 11.

⁴⁰² Kevin Kelly, *Out of Control: The New Biology of Machines, Social Systems and the Economic World* (New York: Basic Books, 1994) 22.

⁴⁰³ *Ibid.*, 22-24.

⁴⁰⁴ He goes on to say, ‘In this way, planning can be fitted to human nature.’ [Ball, *Critical Mass*, 138.]

in our airplane traffic-control system would be a national emergency.⁴⁰⁵ Equally so, complexity and emergence has not been embraced by urbanists in order to observe the ‘nonoptimal’ or ‘noncontrollable’ character of urban growth and traffic flows, but precisely to develop a science, and one presumes a technology (or techniques) with which to rein-in this open-endedness, predict the unpredictable, and organise the organic into governable, ‘smart’, and risk-averse human environments.

Of course, this scenario also describes the values we have invested into ‘sustainability’ today. The principle of sustainability has been written into all relevant contemporary planning policy, including the National Planning Policy Framework, the London Plan (frequently revised under Boris Johnson) and the Farrell Review of Architecture and the Built Environment.⁴⁰⁶ As Cullingworth and Nadin have noted in their ubiquitous reader *Town and Country Planning in the UK*: ‘The broad objective of the UK system has been for many years to “regulate the development and use of land in the public interest”. From 2004 a much wider purpose has been added: to contribute to the achievement of sustainable development.’⁴⁰⁷ The addition of ‘sustainable’ to the question of development serves to shift the emphasis from a primarily social definition, towards an environmental one. But as this thesis has shown, such a distinction is increasingly redundant. Sustainable environmentalism is now closely linked, rather than opposed to the definition of the urban. And although official planning doctrine has acknowledged the importance of sustainability, it is some distance from actually achieving such a principle, and in fact relies on complex analysis, modelling, and simulations to help define and assess the problem. As Peter Hall argued:

There is an urgent demand for integrated environmental planning that brings together varied understandings from both the human and the physical aspects of geography, reuniting them in a way that has hardly

⁴⁰⁵ Kelly, *Out of Control*, 22.

⁴⁰⁶ *National Planning Policy Framework* (London: Department of Communities and Local Government) March, 2012; *The London Plan: The Spatial Development Strategy for London, Consolidated with Alterations Since 2011* (London: Mayor of London) March 2015; *Farrell Review of Architecture and the Built Environment* (London: Farrelles) 2015.

⁴⁰⁷ Barry Cullingworth and Vincent Nadin, *Town and Country Planning in the UK, fourteenth edition* (London: Routledge, 2006) 2.

been seen since the days of Patrick Geddes, and putting them at the service of a new intellectual approach, dedicated to identifying sustainable patterns of urban and regional living and working.⁴⁰⁸

In the pursuit of this goal, complexity offers the building blocks of a science that is both attuned to environmental conditions and amenable to government policy. However, at this early and theoretical stage, we have yet to see the full deployment of complexity science, nor do we fully understand how it might impact planning and development going forward. Rather than a summary judgement, this thesis can only point to what will no doubt continue to be a generative area in need of rigorous theorisation.

Life

Along with the corresponding debates around 'the digital', thinking through this horizon of urban complexity has increasingly become a preoccupation of urban and architectural theory. The proliferation of sensing technologies, embedded in all manner of electronic tools and mechanical infrastructures, has imbued a new vitalism to urban discourse, where 'smart cities' are now discussed in earnest amongst policy analysts and technologists alike. Not only is data gathered to 'make the city observable' but the city itself has been mobilised as a sensory, measuring and measured environment. One might imagine that this, if anything, is the epistemic break that will inaugurate a new era of 'intelligence', over and above the mere 'body' of biopower – a kind of mind/body split triggered by technological breakthrough. Deborah Hauptmann and Warren Neidich have begun to problematise such a turn in their publication *Cognitive Architecture: From Biopolitics to Noo-politics; Architecture & Mind in the Age of Communication and Information* (2010). As Hauptmann writes:

Cognitive Architecture begins with the basic premise that in a world increasingly populated by technologies of information and communication, the analysis on biopolitics must be expanded to include thinking on noopolitics. While the former acts on the body, or populations of bodies, and inscribes habits and practices specific to life (*bios*), the latter operates on mind (*nous*), on general intellect and mental disposition. Here the concept of noopolitics is broadly posited

⁴⁰⁸ Peter Hall, 'Geography and Planning: A New Version of an Old Story?', *New Geographies 1: After Zero* (Cambridge, MA: Harvard University Graduate School of Design, 2009) 153.

as a power exerted over the life of the mind, including perception, attention, and memory.⁴⁰⁹

Hauptmann does qualify these claims, pointing out ‘that we do not believe that the prefix *bio* ... can simply be supplanted by the prefix *noo*’, but even here this binary raises a number of questions.⁴¹⁰ The ambiguity seems to reside in the indeterminate status of ‘intelligence’ itself, and categorical shifting between ‘mind’ and ‘brain’. Take for instance Philip Ball’s account of Helbing and Molnár’s social force model of pedestrian movement, where he describes the simulated walkers as ‘peoploids’.⁴¹¹ Not unlike Gustav LeBon’s theory of crowds, the ‘peoploid’ is a figure that is coded with a body, and indeed a set of behavioural parameters, but no significant thoughts as such – nothing that would count as human affect or political speech. We can only assume, following LeBon that for the sake of the experiment these peoploids have surrendered their individuality to the irrational logic of the crowd. But as Ball later observes, ‘irrational does not mean unpredictable.’⁴¹² In fact, the less intellectually rational, the more driven by instinctual responses, and thus amenable to simulation. These may be effective spatial simulations of neurobiological function, but this is to the necessary exclusion of intellectual operation or any substantive theory of mind.

Equally, one might assume that complexity theory might embrace and promulgate a neuro-social or noopolitical model of the city. Bettencourt especially has described the urban as a dense network of social interactions with material effects on the city.⁴¹³ But even at the level of social networks, the research is concerned primarily with the measurable, material forms these networks take, rather than their content. There is no intellect, no politics, no cultural meaning beyond typological considerations in an urban functional

⁴⁰⁹ Deborah Hauptmann, ‘Introduction: Architecture & Mind in the Age of Communication and Information’, in Deborah Hauptmann and Warren Neidich (eds.), *Cognitive Architecture, From Biopolitics to Noopolitics. Architecture & Mind in the Age of Communication and Information* (Rotterdam: 010 Publishers, 2010) 11.

⁴¹⁰ *Ibid.*

⁴¹¹ Philip Ball, *Critical Mass*, 132.

⁴¹² *Ibid.*, 141.

⁴¹³ See: Luís M.A. Bettencourt, ‘The Origins of Scaling in Cities’, *Science*, Volume 340 (21 June 2013).

system. This is identical in the framework of biopower: a concern for bodies, yes, but only insofar as they provide data for the development of a social physics. The 'first principles' of complexity, as it were, are not intellectual subjectivity in the classical sense, but biological subjectivity in the functional sense.

Developmentality will no doubt exploit emerging cognitive models of urban phenomena, but ultimately even a cognitive noopolitics of the urban remains governed by the principles of the normal and the pathological, operating through the material infrastructures of the city to govern the procedures of urbanisation. The liminal territories of the mind/body split, like the nature/culture divide, are continually revised and renegotiated in every new spatialisation of the logic of developmentality. Nonetheless, these binary dialectics only reflect an even more entrenched and wide-ranging discourse on the biological concept of life – what Foucault saw as one of the limit concepts of scientific thought.⁴¹⁴ Another way of articulating this would be to say that the scientific discourse on life is tied directly to the developmental discourse on the urban, *and conversely*: they have co-produced each other. Just as we ask 'what is life' as the horizon of knowledge in biology, we continue to ask, 'what is the urban' to shape our interventions into the city.

⁴¹⁴ Foucault: 'Life was a concept that served to point out new fields of study that science still had to discover. [...] the concept of life was an epistemological indicator; an index of the problems that still had to be uncovered.' *Human Nature and Ideal Society*, Film (Netherlands: Nederlandse Omroep Stichting, 1971) 00:12:36 – 00:12:53. <https://youtu.be/3wfnl2LoGf8>

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