

The Interplay of Politics and Science in the Making of Petr Kropotkin's Modern Anarchism

Richard Morgan

University College London
(UCL)

Thesis submitted for the degree of Doctor of Philosophy

I, Richard Morgan confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

This thesis examines the political thought of Petr Kropotkin as a site of interplay between anarchism and science. It explores a dialogue between the diagnostic and remedial aspirations of revolutionary anarchism and certain epistemologies and methodologies of nineteenth- and early twentieth-century scientific thought. On the one hand, I argue that this meeting led to the scientisation of Kropotkin's anarchist politics, transforming conventional anarchist ideas on the state, capitalism, and revolution. On the other hand, I consider how Kropotkin politicised science, that is, how he inflected certain scientific theories and concepts and turned them into powerful revolutionary devices that equipped his brand of anarchism with new ways to identify political problems and solutions. Kropotkin's bio-political worldview, his enthusiasm for statistics as a means to visualise society and social law, and his understanding of the 'social' as a field for the application of rational and scientific forms of knowledge for the improvement of human populations, had far-reaching implications for the ways he conceptualised and articulated traditional anarchist notions of power, domination, moral corruption, order, and the dissemination of knowledge. I show that in contrast to political philosophers who employ scientific ideas metaphorically to represent political concepts such as sovereignty, stability, and resistance, Kropotkin's absorption of science was literal. Notions of health, sickness, insanity, degeneration, medicine, and hygiene, for example, did not function analogically in his thought, but were, in fact, some of his key political concerns. The intersection of anarchism and science is presented as an agency stimulating a deep ambivalence in Kropotkin's thought. This thesis does not portray Kropotkin as an optimist, but as a thinker who wavered between fears of decline and hopes for progress. I bring to light Kropotkin's anxieties, uncertainties, paradoxes, and contradictions, revealing the oscillation between pessimism and optimism that haunted his scientific and political modernity.

Contents

Acknowledgments	5
Introduction	6
Part One: Scientific Thought, Statistics, and the Social	33
1. Forms of Knowledge	34
2. Mapping, Measurement, and Statistics	67
3. Transforming the Social	93
Part Two: The Diagnostic and Remedial Politics of Anarchism	107
4. The State	108
5. Capitalism and the Bourgeoisie	137
6. Revolution	160
Conclusion: The Ambivalence of Kropotkin's Anarchism	188
Bibliography	194

Acknowledgements

This project was generously funded by a three-year doctoral scholarship from the Arts and Humanities Research Council (AHRC), as well as the School of Slavonic and East European Studies (SSEES) Excellence Scholarship. I am very grateful to both institutions for the financial support they gave to my work, without which it would not have been possible.

SSEES, University College London, has provided a vibrant and inspiring place to study. I am indebted to the work of its enlightened community of scholars. It has been a pleasure to work with Dr Tim Beasley-Murray. As my supervisor during the last year, his thoughts and ideas have been central to my intellectual experience. My upgrade chair, Dr Susan Morrissey, offered challenging, but constructive criticisms of my approach that I have tried to address since. From its inception, the contributions of Dr Robin Aizlewood to the development of this thesis have been invaluable.

I thank the staff and fellows of the Kluge Centre at the Library of Congress, Washington DC, who helped me immeasurably with research and writing during a three-month AHRC-sponsored fellowship. I thank also the British Council China and Nanjing University, whose Study China Scholarship afforded me a stimulating change of research environment and a period of academic reflection at an important stage of the PhD.

The thoughtful responses of the Anarchist Research Group at Loughborough University raised new and different ways to think about my topic at an early stage of research. Scholars in the Department of History at Royal Holloway continue to influence how I think about history and political ideas. In particular, I acknowledge the insight of Jonathan Baldwin. I cannot think of one part of this thesis that has not benefited from his opinion.

Finally, I would like to express my gratitude to my family and friends. I thank you for discussing, questioning, and challenging my work. I also thank you for taking my mind off it.

R.M

Introduction

*What would you prescribe for all these sicknesses?*¹

Petr Kropotkin, 'To the Young' (1880).

Petr Kropotkin's (1842-1921) political philosophy engaged with the double-sided task of diagnosing humanity's sicknesses and prescribing remedies to cure them. The question from 'To the Young' that I have set as an epigraph to this thesis conveys a mutuality between problem and solution that was central to the way he thought about politics. For roughly half a century Kropotkin worked on discovering threats posed by modern political and economic environments to individuals and society as a whole. He sought to reveal these threats, understand their danger, and analyse their effects. Alongside his political diagnoses, Kropotkin's writings also attempted to identify political treatments that could heal and improve humanity's condition. Showing what was wrong with human beings was meaningful to Kropotkin because it suggested to him how they ought to be. Once located and known, the problems humanity faced could be overcome.

This thesis examines Kropotkin's political diagnoses and remedies in relation to the forms of knowledge and practices that he believed made them possible. The notion that there existed a relationship between these interdependent objectives of his political project and knowledge is not my own assumption. Kropotkin was explicit about making this connection and he went to great lengths to show which ways of knowing the world would form the basis of his political ideas. In 1901, he gave expression to his view of the association:

It is important [...] to know the position it [anarchism] occupies among the various currents of scientific [...] thought that exist at the present time [...]. To which of them does it turn for support? Which method of research does it make use of in order to prove its conclusions?²

¹ Petr Kropotkin, 'To the Young', in *Words of a Rebel*, trans. by George Woodcock (Montréal and New York: Black Rose Books, 1992), pp. 44-63 (p. 45). Originally appeared in *Le Révolté* as 'Aux Jeunes Gens' (1880).

² Petr Kropotkin, *Modern Science and Anarchism* (London: Freedom Press, 1923), p. 6. Originally published in Russian as *Sovremennaia nauka i anarkhizm* (1901).

My research seeks to provide answers to these questions. I study how nineteenth- and early twentieth-century scientific thought interacted with Kropotkin's understanding of what is politically undesirable and desirable. In other words, I examine how the truth claims and authority of science supported his attempts to identify political problems and solutions. Moreover, this thesis analyses how Kropotkin drew on scientific methodological practices in order to prove the conclusions of his political arguments. At the heart of this thesis, then, is an exploration of the interplay between knowledge and politics, a reading of the relationship between epistemology and the political concepts of status quo and transformation.

The above quotation from *Modern Science and Anarchism* (1901) also tells us that Kropotkin was combining scientific knowledge and methods with anarchism. Although Kropotkin thought of anarchism as an attitude, a state of mind, a way of life, and a movement that had existed throughout human history and 'originated among the people', he was open about his project to connect it with prevalent scientific ideas of his time.³ He understood that science's role in this meeting was to intercept and steer the trajectory of the tradition's development, providing its guiding political ideas with new epistemological and methodological bases. Principal strands of anarchist political thought that Kropotkin associated with the work of William Godwin (1756-1836), Pierre-Joseph Proudhon (1809-1865), and Mikhail Bakunin (1814-1876) would somehow now rely on science for their interpretation, meaning, and articulation. Kropotkin was joining the elements of two distinct contexts – the political (anarchism) and the scientific – and marking out his thought as the space for their fusion.

As a site of intersection between revolutionary politics and science, Kropotkin's thought represents a new development in the tradition of anarchist political philosophy. Although his diagnoses of humanity's problems were distinctly anarchist – emphasising the threat of the modern state and capitalism – the ways in which he thought about these threats and the means through which he tried to expose

³ Ibid., p. 1. Historians of anarchism have explored Kropotkin's view that the roots of modern anarchist political thought exist in pre-modern periods. D. Novak traces anarchism's origins in certain schools of thought in ancient Greece and in medieval heretical religious movements. D. Novak, 'The Place of Anarchism in the History of Political Thought', *The Review of Politics*, 3, 20 (1958), 307-29. James Joll discusses the anarchist character of the Anabaptists in the Münster Rebellion of 1535. James Joll, *The Anarchists*, 2nd edn (London: Methuen, 1979). Scholars have also examined the idea that anarchism is a state of mind. Alex Comfort claims that anarchism is 'not a programme', but 'an attitude'. Alex Comfort, 'Preface', in Harold Barclay, *People Without Government: An Anthropology of Anarchism* (London: Kahn and Averill, 1990), pp. 7-9 (p. 9). Richard D. Sonn describes anarchism as 'a faith' that can exercise 'a powerful hold over the imagination'. Richard D. Sonn, 'Preface', in Sonn, *Anarchism* (New York: Twayne Publishers, 1992), pp. xi-xv (p. xiii).

their danger were transformed by scientific ideas. His remedies to these problems were also transformed by science. He offered typical anarchist visions of revolution and far-reaching social change as political solutions, yet they were intended to bring about effects and consequences that made sense to and were measurable in relation to forms of scientific knowledge. With its modified forms of diagnosis and remedy, Kropotkin's scientised brand of anarchism provided the tradition with new and different approaches to the individual and society, to ideas about power, moral corruption, order, and the dissemination of knowledge.

Politics and Science

As an introduction to the two central themes of this thesis – anarchist politics and science – and to illustrate how they came together in his thought, I would like to draw attention to two events that occurred around the time of Kropotkin's birth in 1842. First, in his book *What is Property?* (1840), Proudhon declared himself to be an anarchist.⁴ This is the first known instance of a political thinker willingly adopting the title. Before, particularly during the French Revolution, it had been used as a term of negative criticism and abuse levelled at 'unruly' political adversaries.⁵ Second, in the year of Kropotkin's birth, English social reformer Edwin Chadwick (1800-1890) published his classic study *An Inquiry into the Sanitary Condition of the Labouring Population of Great Britain* (1842). As the title indicates, Chadwick's work was an investigation into the state of public health, a biological assessment of a political territory's population that stretched 'from one end of the island to the other'.⁶

I have chosen to introduce these episodes for their ability to mark out two important developments within nineteenth-century Western political and scientific thought that, I believe, became interwoven strands of Kropotkin's life as a writer and

⁴ Pierre-Joseph Proudhon, *What is Property?* [1840], ed. by Donald R. Kelly and Bonnie G. Smith (Cambridge: Cambridge University Press, 1993), p. 205.

⁵ See George Woodcock, *Anarchism: A History of Libertarian Ideas and Movements* (Harmondsworth: Penguin, 1962), pp. 8-9.

⁶ Edwin Chadwick, 'An Inquiry into the Sanitary Condition of the Labouring Population of Great Britain' [1842], in *Literature and Science in the Nineteenth Century: An Anthology*, ed. by Laura Otis (Oxford: Oxford University Press, 2002), pp. 167-71 (p. 167). For more on Chadwick and his ideas on public health, see R. A. Lewis, *Edwin Chadwick and the Public Health Movement, 1832-1854* (London, New York, and Toronto: Longmans, Green and Co., 1952); Steven Davies, 'Edwin Chadwick and the Genesis of the English Welfare State', *Critical Review: A Journal of Politics and Society*, 4, 4 (1990), 523-36.

thinker. I am interested in how the possibilities for thought represented by these seemingly unconnected events – both understanding that the term ‘anarchist’ could positively identify the creative ambitions of a political thinker and perceiving threats to political populations biologically – became intimately connected currents of Kropotkin’s ideas. Each typified new ways of looking at the world that together, interdependently, developed into the core features of his worldview.

Proudhon’s self-definition as an anarchist brought into being the idea of anarchism as a non-maligned form of political philosophy, establishing a new, positive political identity to which Kropotkin would later subscribe. In relating anarchism with order, Proudhon engendered the possibility for it to be associated with creative as well as destructive political ambitions. Kropotkin grew up in a world where it was possible to conceive of the word ‘anarchist’ as a vocation, a calling that implied a desire not only to condemn socio-economic and political regimes but also to pursue society’s transformation.

This thesis will argue that what Kropotkin hoped to achieve politically as an anarchist – diagnosing and solving social problems – was broadly representative of the trend in nineteenth-century scientific thought depicted by Chadwick’s inquiry. I will show how his anarchist exposé of the dangers facing humanity had a biological focus. Like Chadwick, he was concerned with identifying the threat of disease to human populations, particularly to labouring, or working groups, connecting their bodily experiences to wider processes of industrialisation and urbanisation. With the support of expert knowledge, evidence, facts, and data, Kropotkin understood his political diagnoses to be accurate and exact. He was confident that his anarchist politics could scientifically measure the biological threats facing individuals and society. I will also contend that because he perceived social problems biologically, Kropotkin’s political solutions were medical. His remedies sought to literally heal society with the application of scientific knowledge and technologies.

Anarchism and Science

In 1918, Bertrand Russell (1872-1970) evaluated Kropotkin’s attempt to base a theory of social organisation and production on science. Although he acknowledges that Kropotkin ‘exaggerates what is possible with our present scientific knowledge’, he

nonetheless states that ‘his contentions contain a very large portion of the truth’.⁷ While Russell’s positive assessment is largely due to his sympathies for the anarchist cause, his words depict an uncritical approach to Kropotkin’s thought that has been repeated by later studies. Roger N. Baldwin comments that ‘much of [Kropotkin’s] work in the social sciences is really scientific’, making part of his analysis an appraisal of whether Kropotkin’s ideas really did reach the threshold of science’s investigatory rigor, exactness, and accuracy.⁸ And to support his argument that Kropotkin developed a ‘ground-breaking’ theory of ‘evolutionary holism’,⁹ Brian Morris claims that Kropotkin’s psychological conception of ‘the human subject as composite [...] has been affirmed by recent evolutionary psychology’.¹⁰ Morris’ opinion that Kropotkin practised ‘correct science’ is a value judgment of the scientific character of Kropotkin’s thought. Such scholarship falls short of providing a historical interpretation of the relationship between science and Kropotkin’s anarchism, but merely reinforces modern science’s epistemological claim to provide the exclusive gateway to reality and its truths.

Ruth Kinna warns against this uncritical approach. She shows that the ‘scientific’ has been understood as a standard rather than a historically loaded term. While some scholars praise Kropotkin’s political ideas for their scientific qualities, others critique them for their lack of objectivity.¹¹ Either way, a normative understanding of the concept of scientific worth applies to both positions. This study takes Kinna’s warning seriously. It is not interested in the supposed scientific validity of Kropotkin’s politics. Such an approach would take at face value the very ideas that I seek to question in relation to his political thought. While ‘science’ and ‘scientific’ are clearly loaded terms, when discussing Kropotkin’s scientific anarchism, as well as claims by other thinkers to be scientific, I do not intend to make value judgments about an idea’s proximity to truth, its rigor, or objectivity. I invoke David Garland’s understandings of the term ‘scientific’. First, I use it to discuss political ideas ‘which were self-consciously undertaken within a framework derived from natural science’. Second, I use it as a term to distinguish certain political ideas ‘from other ones which

⁷ Bertrand Russell, *Roads To Freedom: Socialism, Anarchism, and Syndicalism* [1918] (London: Allen Lane and Unwin, 1933), p. 64.

⁸ Roger N. Baldwin, ‘Introduction’, in *Kropotkin’s Revolutionary Pamphlets: A Collection of Writings by Peter Kropotkin*, ed. by Baldwin (London: Dover Publications, 1970), pp. 1-12 (p. 7).

⁹ Brian Morris, ‘Kropotkin’s Metaphysics of Nature’, *Anarchist Studies*, 2, 9 (2001), 165-80 (p. 166).

¹⁰ *Ibid.*, p. 168.

¹¹ Ruth Kinna, ‘Kropotkin and Huxley’, *Politics*, 2, 12 (1992), 41-47 (pp. 43-44).

were phrased in moral, religious or common-sense vocabularies'. Last, the 'uncritical use of the term "science" is intended as an historical attribution, repeating actors' conceptions, not an epistemological evaluation'.¹² In other words, I aspire to understand how Kropotkin understood science, its power, and its potential to improve the human condition through its connection to anarchism.

In *Classical Anarchism: The Political Thought of Godwin, Proudhon, Bakunin, and Kropotkin* (1991), George Crowder conducts a more sophisticated reading of the place of science in anarchist political thought. He argues that the four anarchists are united by their nineteenth-century scientism.¹³ The book attempts to show how the ideas of thinkers such as Henri de Saint-Simon (1760-1825), Auguste Comte (1798-1857), and Charles Darwin (1809-1882) influenced the anarchists' belief in the possibility of uncovering social laws and achieving moral improvement. Significantly, Crowder identifies scientism as a platform for anarchist politics: 'The belief that the methods of empirical science provide a model appropriate to all fields of inquiry, is the chief support of the anarchists' optimism about the possibility of a non-coercive social order'.¹⁴ From this perspective, the political idea of anarchy is explained as a nineteenth-century social science whose methodologies have been transposed from the natural sciences.

Crowder points to the influence of science's empiricist epistemology on anarchist thought. Godwin, Proudhon, and Bakunin each thought human observation was capable of reliably encountering reality. Crowder's sections on Kropotkin are also convincing in their treatment of the general role of empiricism in his approach to knowledge.¹⁵ He gives an account of the origins of Kropotkin's opinion that one should not search for knowledge 'outside and above the world which is accessible to our senses'.¹⁶ Moreover, in drawing attention to the influence of broad and general

¹² David Garland, 'British Criminology Before 1935', *The British Journal of Criminology*, 2, 28 (1988), 1-17 (p. 1).

¹³ Scientism is one of three themes that Crowder believes unite the political thought of Godwin, Proudhon, Bakunin, and Kropotkin, constituting a tradition of classical anarchism. The four thinkers' shared understanding of freedom as moral self-direction and their debt to the ideas of Jean-Jacques Rousseau are also thought to characterise this tradition.

¹⁴ George Crowder, *Classical Anarchism: The Political Thought of Godwin, Proudhon, Bakunin, and Kropotkin* (Oxford: Clarendon Press, 1991), pp. 29-30.

¹⁵ *Ibid.*, pp. 119-169.

¹⁶ Petr Kropotkin, *Ethics: Origin and Development*, trans. by Louis S. Friedland and Joseph R. Piroshnikoff (Bristol: Thoemmes Press, 1993), p. 42. Kropotkin died before completing this work. It was originally published in Russian as *Etika* (1922). The first three chapters of this book are modified reprints of Kropotkin's articles 'The Ethical Need of the Present Day' (1904) and 'The Morality of Nature' (1905), both of which were published in *The Nineteenth Century and After*. In the main, I refer

trends in nineteenth-century scientific thought, Crowder is able to make some historical sense of the intellectual atmosphere in which Kropotkin's political ideas, in particular his theory of mutual aid, were born and drew breath.

This thesis addresses and complicates Crowder's study in a number of ways. First, not only do I show more extensively that scientific ideas supported Kropotkin's optimism about the possibility of a better future, but that they were also the chief support of his pessimism about the decline of humanity. The scientific method not only promised Kropotkin the possibility of moral improvement but, overlooked by Crowder, the reality of moral sickness. Science's impact on Kropotkin was not limited to stimulating his hope; to the same degree it darkened his despair, fuelled his fears, and intensified his anxieties.

Second, I develop Crowder's view that general trends in nineteenth-century scientism influenced Kropotkin's thought. Part of my research seeks to enlarge this perspective. To the broad atmospheric impact of epistemological empiricism and the desire to fruitfully transpose the assumptions of the natural sciences to the social sciences, I add the nineteenth-century's widespread faith in the power of statistics to acquire information about human populations. Kropotkin's political project incorporated science's growing reliance on statistical measurement. His thought not only reflected statistics' growing public nature – the communication of ideas in a numerical language which was spoken in the popular press as well as in scientific literature – but the shifting interest in what was being measured. Kropotkin's interest in statistical representations of the qualitative concern of social health is indicative of the statistical enthusiasm of the nineteenth century.

Finally, Crowder writes that 'the influence of scientism on the anarchists is of a [...] general, imprecise nature, the transmission not so much of specific arguments traceable to particular works as of a general intellectual climate'.¹⁷ While I agree with Crowder that general, pervasive trends in nineteenth-century scientific thought can be found in Kropotkin's political writings, I do believe that there were a number of important specific theories, concepts, thinkers, and works that came to play a critical role in how he understood and articulated key strands of the anarchist political tradition. As well as the general role of scientism, then, I bring to light the role of late

to these articles' modified reprinted form in *Ethics* throughout this thesis, although I do quote directly from 'The Ethical Need of the Present Day' when style and wording is preferred.

¹⁷ Crowder, *Classical Anarchism*, p. 30.

nineteenth- and early twentieth-century ideas from disciplines such as criminology, psychiatry, crowd psychology, medicine, and hygiene with reference to particular works, thinkers, and concepts. Specific arguments about crime, insanity, disease, and degeneration, for example, found expression in Kropotkin's political writings. Of course, these ideas were, as all ideas are, part of what Crowder calls a 'general intellectual climate'. Nonetheless, individually as well as cumulatively they interacted with Kropotkin's conception of anarchism in powerful and creative ways. Furthermore, by engaging with these largely unexplored (in relation to Kropotkin's political thought) areas of knowledge, my thesis rethinks Crowder's classification of Kropotkin as a classical anarchist along with Godwin, Proudhon, and Bakunin. If, as I will argue, Kropotkin's engagement with science was of a far more specific and deliberate nature than that of his predecessors, then his affinity with them, to the extent that he can be grouped into a canon of classical anarchism, appears contentious.

Crowder's approach has been criticised for reasons other than what I claim is its lack of specificity, its failure to acknowledge scientism's role in stimulating pessimism, and its unawareness of science's reliance on statistical methods. Kinna argues that Crowder's emphasis on the scientific provides a presentation of mutual aid as a theory of social law, rather than an anarchist idea with desired political implications. She shows how efforts to understand Kropotkin's scientific thought have resulted in mutual aid being 'stripped of its political content altogether'.¹⁸ Her analysis seeks to address this deficiency, demonstrating how Kropotkin recruited science to empower his political ideas. Mutual aid was not developed merely as a contribution to scientific thought whose political implications for anarchism were secondary. Rather, Kropotkin intentionally turned to biology to address a set of specific political problems: the 'political aspect was primary'.¹⁹ The theory of mutual aid sought to reverse the decline of anarchism during the 1890s in the face of the rise of Marxism and the theoretical threat of Nietzschean individualism. As a political doctrine based on science, mutual aid challenged Marxism's law of historical development with a notion of evolutionary change driven by action and intervention. It was also designed to strike a blow to Friedrich Nietzsche's (1844-1900) rejection of morality by scientifically identifying a moral sense within humanity, not without. 'For all his

¹⁸ Ruth Kinna, 'Kropotkin's Theory of Mutual Aid in Historical Context', *International Review of Social History*, 2, 40 (1995), 259-83 (p. 260).

¹⁹ *Ibid.*, p. 261.

passionate interest in science’, Kinna argues, ‘Kropotkin’s political aim was paramount’.²⁰ Science could transform anarchist politics.

This thesis also treats Kropotkin’s anarchist politics as paramount. My commitment to understand his scientific thought is a necessary part of my ambition to understand his political ideas. Like Kinna, I examine how Kropotkin drew on scientific ideas in order to develop and strengthen anarchist political arguments. Though sharing a similar approach to Kinna, however, my study explores the impact of different scientific ideas on different political dimensions of Kropotkin’s anarchist political thought. For Kropotkin’s attempt to express anarchist politics through science was not limited to his theory of mutual aid. While I share Kinna’s opinion that science was always ‘tailored to meet [Kropotkin’s] political concerns’,²¹ the scientific ideas I am primarily interested in are not those of Darwin and Thomas H. Huxley (1825-1895). Instead, I consider how Kropotkin inverted, inflected, and manipulated scientific ideas about deviance – ideas often used to attack and condemn anarchists and anarchism – in order to transform anarchist politics. The disciplines of criminology and psychiatry, for example, were important sources of knowledge for Kropotkin whose ideas he also tailored to meet his political concerns. Although the evolutionary ideas of Jean-Baptiste Lamarck (1744-1829) are important to this study’s interpretation of Kropotkin’s politics, the sciences of evolution constitute only part of the scientific context I connect to his anarchism. Moreover, I do not follow Kinna in assessing how Kropotkin used scientific thought to build a theory of mutual aid capable of preventing the decline of the anarchist movement. I seek to understand how Kropotkin tailored biosocial science to meet the anarchist political ambitions of diagnosing and remedying the problems afflicting humanity in the modern world. In other words, I identify ways in which scientific ideas helped Kropotkin make sense of and articulate some of the core political themes of nineteenth-century anarchist political philosophy: a theory of state power, a critique of capitalism, and an idea of revolution.

While *Mutual Aid* features in my work, therefore, it does not constitute the main textual site in which to study the meeting of politics and science. As Kinna’s research indicates, as an example of Kropotkin’s reliance on science to develop the politics of anarchism, it has been thoroughly assessed. However, other texts, I believe, have not been adequately interrogated as sites of the intersection of anarchism and

²⁰ Ibid., p. 279.

²¹ Ibid., p. 282.

science. One of these is *In Russian and French Prisons* (1887). In this book, Kropotkin absorbs the insights of the sciences of crime and insanity to sharpen his political critiques of the state and capitalism. Although the scientists of deviance to whom Kropotkin refers in this book are not the usual suspects one finds in explanations of his use of science, the ideas developed by these thinkers had a profound impact on his political conceptions of oppression, suffering, and resistance.

I use the term ‘absorption’ to describe my understanding of Kropotkin’s relationship to and use of modern scientific ideas. Kropotkin made a career out of reading, conducting, contemplating, reviewing, challenging, and promoting contemporary scientific research. It was a constant feature of his everyday existence. He managed to make a living through his scientific contributions and reviews for journals such as *Nature* and *The Nineteenth Century*.²² In this sense, Kropotkin’s absorbent relation to modern science conveys his intellectual practice of staying in touch with and learning the newest scientific ideas of his time from a whole range of disciplines. Yet, there is another dimension to the term ‘absorption’ that I think of when trying to understand Kropotkin’s relationship with science. The process did not end with him understanding a new scientific idea. He had a creative interaction with scientific thought that involved incorporating new theories into his political arguments. In highlighting this interaction I do not attempt to exactly recreate the ‘influence’ of scientific thought on Kropotkin’s politics in the style of a genealogical influence study. I study the conceptual interplay between politics and scientific knowledge in the language and arguments of his anarchist writings. Although absorbing science bestowed a degree of authority and ‘fashionableness’ onto Kropotkin’s brand of anarchism, of more importance, I believe, was that it provided him with a conceptual tool kit with which to make sense of the problems in the world that anarchism seeks to address.

Kropotkin’s vast absorption of science did not dilute or bring an end to the political in his thought. I do not interpret his vision of a rational social order as a form of Saint-Simonian technocracy.²³ Questions about how human beings should live

²² For Kropotkin’s description of how he began to work for *Nature*, see Petr Kropotkin, *Memoirs of a Revolutionist* (New York: Dover Publications, 2010), pp. 381-82. Originally appeared in *Atlantic Monthly* as ‘Autobiography of a Revolutionist’ (1888-1889).

²³ On Saint-Simonian technocratic thought, see Robert B. Carlisle, ‘The Birth of Technocracy: Science, Society, and Saint-Simonians’, *Journal of the History of Ideas*, 3, 35 (1974), 445-64. On the influence of Saint-Simonian technocracy on Proudhon, see Crowder, *Classical Anarchism*, p. 34. In *The General Idea of the Revolution in the Nineteenth Century*, Proudhon quotes a passage from Saint-Simon in which

politically did not give way in Kropotkin's thought to a subaltern confidence in expert knowledge and administrative or industrial rule. I read his anarchism as a vision of mass politics, as an idea about how people might exist en masse in relation to each other and their environment. These were political ideas that Kropotkin could express through recourse to scientific ideas. As we shall see in part two of this thesis, science did not displace, override, or weaken anarchism, but gave it vitality.

Anarchism remained strong enough an influence in Kropotkin's mind that it altered the very scientific ideas that were designed to support it. I highlight these moments, proving that anarchism could transform science, as well as be transformed by it. Particularly interesting in this regard is Kropotkin's modification of nineteenth-century criminal psychiatry's conception of the will into a revolutionary device, as well as his inversion of the concept of degeneration in order to characterise the threat of the bourgeoisie. It is by marking these and other developments in Kropotkin's thought that this thesis displays its sensitivity to the fact that anarchism's relationship to science was not simply passive. I understand that the relationship was a two-way process. Each affected the character of the other. This thesis, then, not only brings to light the scientisation of politics, but the politicisation of science.

Scholars have interpreted the meeting of radical politics and science in the work of other anarchist thinkers and movements. John P. Clark and Camille Martin assess the connection between anarchism and science in the thought of anarchist geographer Elisée Reclus (1830-1905), who constructed a critique of the state and an ideal of social anarchy with reference to geographical ideas about the history of the earth and planetary liberation.²⁴ Scholars of Spanish anarchism recognise major scientific themes that I identify in Kropotkin's thought. Richard Cleminson informs us

the 'destiny' of man's development is revealed to be a state that has passed from the 'governmental' to the 'administrative', a shift made possible by 'sufficient progress in the physical sciences and in industry'. Pierre-Joseph Proudhon, *The General Idea of the Revolution in the Nineteenth Century* [1851], trans. by John Beverley Robinson (London: Pluto Press, 1989), p. 122.

²⁴ John P. Clark and Camille Martin, *Anarchy, Geography, Modernity: The Radical Social Thought of Elisée Reclus*, ed. by Clark and Martin (Lanham, Maryland: Lexington Books, 2004), p. 61. Kropotkin was also a geographer, of course, and is often referred to as the 'anarchist geographer', for example, by Brian Morris in his biography *The Anarchist Geographer: An Introduction to the Life of Peter Kropotkin* (Somerset: Genge Press, 2007). Although there are interesting connections between Kropotkin's geographical thinking and his political ideas, in particular the role of exploration in his anarchist educational theories, the impact of geography as a scientific discipline on his anarchism falls outside the limits of this thesis. For Kropotkin's geographical thought acting in support of his anarchist ideas, particularly education, see Petr Kropotkin, 'What Geography Ought to Be' [1885], in *Human Geography: An Essential Anthology*, ed. by John Agnew, David N. Livingstone, and Alisdair Rogers (Cambridge and Massachusetts: Blackwell Publishers, 1996), pp. 139-54. Originally appeared in *The Nineteenth Century*.

that in the 1860s the concept of public health arose as a dominant concern for Spanish anarchists.²⁵ The biological notion of social welfare was fed into an anarchist critique of the state and a theory for decentralised social arrangement. Anarchists attacked centralised authority for its inability to prevent social sickness and called for a people-managed system of welfare to restore social health. Álvaro Girón explores how within the context of public health concerns, the idea of degeneration permeated Spanish anarchism around the turn of the twentieth century. He argues that Spanish anarchists ‘considered degeneration to be a fact, although establishing both a different diagnosis and treatment’.²⁶ With the threat of degeneracy a seeming reality, anarchists searched for the causes of humanity’s biological decline in certain environments. Anarchist politics drew meaning from more generally felt European biomedical fears common to the fin-de-siècle.

My work relates to this trend in the scholarship of anarchism. I demonstrate how the marriage of biomedical notions of public health and social decline to revolutionary politics came to characterise the political diagnoses and remedies of one of the European anarchist movement’s leading figures. I show how this combination was arranged on a total scale in Kropotkin’s thought, spanning numerous books and articles and informing discussions of diverse topics such as prisons and battlefields. For, as Girón points out, while Spanish anarchists looked to the environments of capitalism to explain the causes of sickness, Kropotkin also condemned the pathogenic environments of state power as sites of infection and pestilence. It is the nuances of Kropotkin’s absorption of ideas of health and disease that interest me. I locate these absorptions in various areas of his work: in his investigations into political situations in different national contexts; in his writings about individual bodies, societies, and species; in his historical studies; in his analysis of literary plots and characters; and in his imaginations of the past, present, and future. My study does project Kropotkin’s commonality with other anarchist thinkers and movements who incorporated contemporary scientific ideas into their political projects, but it also reveals the scope and peculiarity of his innovations, his unique playfulness and creativity with science.

²⁵ Richard Cleminson, ‘Anarchists for Health: Spanish Anarchism and Health Reform in the 1930s. Part 1: Anarchism, Neo-Malthusianism, Eugenics and Concepts of Health’, *Health Care Analysis*, 3 (1995), 61-67. On Spanish anarchism’s treatment of eugenicist ideas, see Richard Cleminson, *Anarchism, Science and Sex: Eugenics in Eastern Spain, 1900-1937* (Bern: Peter Lang, 2000).

²⁶ Álvaro Girón, ‘Metáforas finiseculares del declive biológico: Degeneración y revolución en el anarquismo español (1872-1914)’, *Asclepio*, 1, 51 (1999), 247-73 (p. 247).

Anarchist Politics

Martin A. Miller declares that Kropotkin ‘vigorously attempted to redefine anarchism’.²⁷ One of the main arguments of this study is that Kropotkin was successful in this attempt and that he was able to achieve this process of redefinition by bringing key strands of anarchist thought into contact with various scientific ideas and practices. Kropotkin’s project was one of continuing and developing a notion of a pre-existing anarchism. He thought of his work in this way, orientating his ideas within an already established anarchist tradition of political philosophy, a lineage with its own heritage and legacies.²⁸ Kropotkin’s relation to this tradition is also evident in the ideas that played out in his writings: his hostility to authority, domination, and control; his criticism of exploitation; his disgust at moral corruption; his attempt to marry destruction and creation; his hopes for the dissemination of knowledge; his concern for the free expression of individuality within communal social structures; and his faith in the political power of the masses. These are the ideas I trace in Kropotkin’s thought. I point out the moments of their meeting with science and analyse the changes they undergo as a result. Thus, I treat fundamental aspects of anarchism not as fixed or unchangeable, but as loose and malleable ideas, as concepts that can be understood in different ways and articulated through new forms of language. It follows that a central claim of this thesis is that political ideas, including those of anarchism, rest on certain forms of knowledge and technologies. In other words, political ideas are indebted to certain epistemological assumptions and beliefs about what methods of investigation are best able to make the world knowable.

Anarchism’s understanding of and opposition to certain forms of power occupy a central place in my discussion of Kropotkin’s political diagnoses. Although I maintain that Kropotkin does oppose certain political and economic forms of power, I am concerned with *how* he understood these features of modern state politics and capitalism. In my close reading of his writings on state punishment, warfare, sites of work, and places of dwelling, I argue, above all, that Kropotkin developed a biological conception of power that highlighted the bodily suffering of human beings at the hands of political and economic authority.

²⁷ Martin A. Miller, ‘Introduction’, in *Selected Writings on Anarchism and Revolution*, ed. by Martin A. Miller (Cambridge, Massachusetts, and London: The M.I.T. Press, 1970), pp. 1-44 (p. 4).

²⁸ See, for example, Kropotkin’s eighth chapter in *Modern Science*.

In revealing that Kropotkin responded to a biologically understood form of power, this thesis raises questions about the notion of power in anarchist thought more generally. My reading of Kropotkin's critique of the state and capitalism, therefore, contributes to studies that have found that anarchism does not always conceptualise power as something that is inflicted *upon* a victim. Todd May, for example, discusses how the notion of domination in the state's coercive, punitive, destructive, or exploitative relation to society, cannot only refer to the existence of power in itself, but also to 'oppressive power relations'.²⁹ Employing a Foucauldian reading of power, May suggests that if power 'is elastic, then its different appearances are irreducible to a specific form of domination', for example, the top-down domination of society by the state.³⁰ From this perspective, the conventional anarchist opposition to state power is challenged, as power is removed from its position as something to be wielded, willed, imposed, or 'consciously applied', and seen rather as operating 'not only consciously but unconsciously and anonymously'.³¹ Kropotkin's conception of biological power has similar qualities to those described by May. It is not overtly visible, but can only be seen through the special lens of biomedical knowledge. Its movement can be traced only by measuring the condition of individual and social health. Kropotkin's concern is not so much with force, but with a power that penetrates human life through social environments. In the conditions they create for human organisms to exist, states and capitalism set in motion a power that is felt inside the bodies of human beings, whose harm to society can spread horizontally, anonymously, subtly, yet no less destructively.

Anarchism does not simply attempt to understand power, but to challenge it. I consider how Kropotkin sought deconstruct, overcome, and demolish power as part of his revolutionary remedy.³² In so doing, I show how his effort to eliminate the threat of power relied on a concept of revolution as hygiene. Having located threats to humanity biologically and identified power as something that affects the body, Kropotkin's

²⁹ Todd May, 'Anarchism from Foucault to Rancière', in *Contemporary Anarchist Studies: An introductory anthology of anarchy in the academy*, ed. by Randall Amster, Abraham DeLeon, Luis A. Fernandez, Anthony J. Nocella, II, and Deric Shannon (Oxon and New York: Routledge, 2009), pp. 11-17 (p. 12).

³⁰ Ibid.

³¹ Ibid., p. 13.

³² Noam Chomsky sees this as one of anarchism's fundamental political concerns. He argues that anarchism seeks to 'dismantle [...] forms of authority and oppression'. Noam Chomsky, 'Introduction', in Daniel Guérin, *Anarchism From Theory to Practice*, trans. by Mary Klopper (New York and London: Monthly Review Press, 1970), pp. vii-xx (p. viii).

ambition to dismantle the state and capitalism required the authority and knowledge of medicine. To be healthifying and regenerative through hygiene, the anarchist revolution needed to eradicate the political and economic causes of biological sickness.

My approach, without seeking to create new groups of anarchist thinkers, speaks to classificatory studies of anarchist thought. I have already mentioned how my approach challenges Crowder's grouping of the classical anarchists. Indeed, by showing the nuances of Kropotkin's development of key anarchist ideas, my study rethinks Kropotkin's affinity with other anarchist thinkers, proving how he could be both politically 'in line' with the tradition, while conceptually innovative and challenging. In this way, my study relates to a style of scholarship whose objective, as Benjamin Franks notes, is to present 'anarchism spatially, through the interconnectedness of ideas, rather than historically through the interaction of organisation'.³³ In *Anarchism: Exponents of the Anarchist Philosophy* (1900), Paul Eltzbacher (1868-1928) was one of the first scholars to attempt such a classification. Eltzbacher's goal in this project was, as he put it, 'to get determinate concepts of Anarchism and its species'³⁴ in order to 'penetrate its essence'.³⁵ Eltzbacher was looking for a connecting thread running through anarchist thought, arranging Godwin, Proudhon, Max Stirner (1806-1856), Bakunin, Kropotkin, Benjamin Tucker (1854-1939), and Lev Tolstoy (1828-1910) by way of their commonality. According to Eltzbacher, these seven thinkers share only one uniting characteristic: 'they negate the State for our future'.³⁶

In my connection of Kropotkin's work with other anarchist thinkers I do not attempt to reclassify his thought in order to challenge Eltzbacher over what might be the defining feature of anarchism. I attempt to illustrate Kropotkin's engagement with particular themes of anarchist thought, themes I highlight in the work of the leading figures of the nineteenth-century tradition. While I draw on oft-cited anarchist thinkers from the nineteenth century, I do not intend to construct or 'blast' canons in my work.³⁷ I refer to anarchist writings in order to identify what I believe to be broad but

³³ Benjamin Franks, *Rebel Alliances: The means and ends of contemporary British anarchisms* (Glasgow: Bell and Bain Ltd., 2006), p. 28.

³⁴ Paul Eltzbacher, *Anarchism: Exponents of the Anarchist Philosophy* [1900], ed. by James J. Martin, trans. by Steven T. Byington (New York: Chip's Bookshop Booksellers and Publishers, 1959), p. 4.

³⁵ *Ibid.*, p. 1.

³⁶ *Ibid.*, p. 189.

³⁷ On the problem of canonical thinking in anarchist studies, see Ruth Kinna and Süreyya Evren, 'Introduction: Blasting the Canon', in *Blasting the Canon*, ed. by Kinna and Evren (New York: Punctum, 2013), pp. 1-6.

key strands of anarchist politics that are evident in Kropotkin's thought, but that were transformed as a result of his absorption of science. In relation to Eltzbacher's study, for example, the approach of this thesis does not question if Kropotkin negated the state for our future, whether the seven sages is a fair arrangement of thinkers, and whether or not Kropotkin deserves his place amongst them. Instead, my presentation of Kropotkin's application of science to the study of the state and its power can encourage us to rethink his conceptual relation to other anarchist thinkers. By showing that Kropotkin studied the state's relation to society through the lens of biomedicine, and that this relation could be measured using statistics, this study does not dispute Kropotkin's position as an anarchist, but draws attention to his unique interpretation of what Eltzbacher calls one of the tradition's 'determinate concepts': the negation of the state.

My interest into how science interacted with Kropotkin's interpretation of political ideas is not limited to the anarchist tradition. I also make a link to a broader tradition of European political philosophy, not to show how he developed or contributed to specific treatises and projects but to bring to light how science modified key concepts from that tradition. Visions of both the body politic and the state of nature, as well as theories of natural and social law, acquired new significance in Kropotkin's thought as a consequence of his scientised political worldview.

Life and Ideas

In the face of an apparent twenty-first-century disaster, Morris prescribes for humanity a reading of Kropotkin's anarchist philosophy. If taken seriously, he claims, Kropotkin's writings could save modern society from imminent peril:

In an era when corporate capitalism reigns triumphant, creating conditions that induce fear, social dislocation, economic insecurity, and political and ecological crises, and when there is a pervasive mood of "apocalyptic despair" among many intellectuals [...], there is surely a need to take seriously Kropotkin's vision of an alternative way of organizing social life.³⁸

³⁸ Brian Morris, *Kropotkin: The Politics of Community* (New York: Humanity Books, 2004), p. 35.

Outlining a vision of escape, describing how we might save ourselves from ruin, Morris' plea reflects what historian of degeneration Daniel Pick would describe as the 'interlocking languages' of progress and decline.³⁹ Morris inserts Kropotkin into a delicately balanced oscillation between pessimism and optimism where despair and hope challenge, check, and reinforce one another. Anarchism becomes the only way out of the present misery.

Morris' confidence in Kropotkin's ability to resolve the present 'crises' seems a little demanding of a man who was embroiled within a different sense of crisis distinct to his own time. While the significance of Kropotkin's work could be said to extend further than the context of the late nineteenth and early twentieth century, the particular interwoven dynamic of progress and decline characteristic of that period should not be sidestepped if we are to understand the thought of this man believed to be so important for *our* survival.

A consideration of the impact of the late nineteenth- and early twentieth-century dynamic of 'progress and decline' on his anarchist philosophy is a noticeable absence in historical studies of Kropotkin. Many scholars interested in the relationship between Kropotkin's thought and the time in which he lived overlook the impact of the pessimistic sides of nineteenth-century thought on his brand of anarchism. He is often represented as someone resembling the 'beautiful white Christ'⁴⁰ of Oscar Wilde's *De Profundis* (1905), the eternal optimist with an unbreakable faith in the goodness of humanity. He is the product of the supposed positivity of his age, an optimistic thinker, according to Paul Avrich, whose 'whole philosophy implied a faith in human progress that was typical of the age in which he lived'.⁴¹ His philosophy has also served as an example of the confidence in the technological and scientific advancements that enchanted the nineteenth century. Thus, Caroline Cahm suggests his thought is representative of the 'optimism of the positivists in the limitless possibilities of the

³⁹ Daniel Pick, *Faces of Degeneration: A European Disorder, c. 1848 – c. 1918* (Cambridge: Cambridge University Press, 1989), p. 3.

⁴⁰ Oscar Wilde, *De Profundis and Other Writings* (London: Penguin, 1986), p. 180. Originally 1905. Wilde referred to Kropotkin with this phrase. Woodcock and Avakumovic use Wilde's words for the title of the fifth chapter of their biography, entitled 'The White Jesus'. George Woodcock and Ivan Avakumovic, *The Anarchist Prince: A Biographical Study of Peter Kropotkin* (London and New York: T.V Boardman, 1950), p. 200.

⁴¹ Paul Avrich, 'Editor's Introduction', in Petr Kropotkin, *The Conquest of Bread*, ed. by Avrich (London: Allen Lane and The Penguin Press, 1972), pp. 1-24 (p. 17).

inductive deductive methods of scientific enquiry'.⁴² In comparison to some of his revolutionary compatriots, Kropotkin's seemingly calm, rational, and 'progressive' mind sets him apart from the shadows where the more mysterious Bakunin and Petr Tkachev (1844-1886) are often found lurking.

But Kropotkin had a dark side too. His mind was host to an unceasing pessimism that, when viewed in its historical context, spoke to a number of contemporary anxieties and made sense to the people and the world about him. As I will show, he was fearful of a number of scientifically defined problems: diseases, crime epidemics, moral contagion, the degeneration of the human species. This is not to say that claims for Kropotkin's optimism are false or unfounded. On the contrary, I believe Kropotkin's optimism *was* relentless, but that it formed but one side of his complicated worldview. Alongside, there existed a deep-seated negativity, continually testing, provoking, and stimulating what Paul McLaughlin terms Kropotkin's 'excessive revolutionary optimism'.⁴³ His hopes responded to his fears; they were remedial. If Kropotkin's thought is 'typical of the age in which he lived', as Avrich puts it, then it was not in its unflinching optimism, but in its uncertainty about civilisational decay, its anticipation of biological decline, and its oscillation between progress and regression.

This thesis will expose the darker, pessimistic side of Kropotkin's worldview. It seeks to connect his fears to his historical context in which strains of optimism and pessimism were delicately poised. Kropotkin's concerns about the fate of the modern world will be approached as particular, inverted expressions of a broader anxiety about decline that haunted scientific, cultural, and political discourses of the period.

Connections between Kropotkin's lived experience and his ideas, therefore, are important for this study. Part of my approach involves exploring when and how Kropotkin acquired certain attributes that would later prove essential for his career as a revolutionary thinker. This analysis builds on attempts made by other scholars to draw lines of causation between aspects of Kropotkin's life and the development of his political views. This practice is particularly interesting when it deals with Kropotkin's formative years: his education in the Corps of Pages and his experiences of travel and scientific work in Siberia.

⁴² Caroline Cahm, *Kropotkin and the Rise of Revolutionary Anarchism 1872-1886* (New York and Cambridge: Cambridge University Press, 1989), p. 1.

⁴³ Paul McLaughlin, *Anarchism and Authority: A Philosophical Introduction to Classical Anarchism* (Hampshire, Burlington: Ashgate, 2007), p. 160.

Cahm finds a foundation of Kropotkin's political dissatisfaction with the socio-economic and political status quo of Russia in his experiences at the Corps of Pages. Citing bullying and the punishment of isolation, she writes that 'Kropotkin's growing alienation from his class and distaste for the social system was reinforced by his experiences as a student'.⁴⁴ Such distaste for the social system, she argues, developed into a much stronger political opposition during Kropotkin's time in Siberia. Taking their lead from Kropotkin's memoirs, in which he wrote that 'I lost in Siberia whatever faith in state discipline I had cherished before. I was prepared to become an anarchist',⁴⁵ biographers explain his anarchist politics a result of personal experiences. Woodcock and Avakumovic put this case forward, suggesting that 'it was through his lessons in Siberia that he gained the mental outlook which later made him such a steadfast opponent of governmental interference'.⁴⁶ Witnessing first hand the inefficiency of reform, the Russian state's brutal punishment of local resistance, and the simple workings of ungoverned peoples, Kropotkin is deemed to have undergone an emotional change that was later expressed through the ideals of anarchism. In his biography of Kropotkin, Miller describes this shift:

Though some years were still to elapse before he finally committed himself to a career in revolutionary activity, the time he spent as a military officer in Eastern Siberia prepared him for that commitment. Kropotkin underwent a serious alteration in his entire world view at this time. He went to Siberia in 1862 full of enthusiasm for the possibilities of national reform that awaited him. He left five years later completely disillusioned.⁴⁷

Miller's words depict the tendency in biographical scholarship that explains Kropotkin's complex and multifaceted political beliefs by reference to the formative experiences of his youth. It amounts to an inference as to the effects of Kropotkin's time in the Corps of Pages and Siberia on his psychology. The origins of Kropotkin's political views are 'found' in his emotional reactions to real life events that came into contact with his lived experience.

This study provides an alternative reading of the connection between Kropotkin's life and his ideas. Like Cahm, Woodcock and Avakumovic, and Miller, I am interested in the relationship between Kropotkin's youth and his 'mental outlook'

⁴⁴ Cahm, *Kropotkin*, p. 20.

⁴⁵ Kropotkin, *Memoirs*, p. 217.

⁴⁶ Woodcock and Avakumovic, *The Anarchist Prince*, p. 59.

⁴⁷ Martin A. Miller, *Kropotkin* (Chicago and London: University of Chicago Press, 1976), p. 70.

and 'worldview'. However, my study does not attempt to explain Kropotkin's political thought in terms of psychology as Miller does, but in terms of ways of thinking about and perceiving the world. In short, I am concerned with how these experiences were epistemologically and methodologically formative, not emotionally. I want to know which forms of knowledge, skills, and techniques he acquired during his schooling in the Corps of Pages and his military service in Siberia that made the expression of his anarchist political thought possible. I assess what methods of social investigation he learned and trace examples of their usage across many of his political writings. I believe that both periods of Kropotkin's life were important in terms of educating him about what to study. These inclinations played out in productive ways in his anarchist project.

As well as subjecting him to strict discipline, officialdom, and authority, the Corps of Pages trained Kropotkin in the skills he would later use to convey the arguments of his political project. It was in this military academy of the state where he learned to measure social reality, a practice indispensable for mass political ideas. He was taught the value of bestowing order onto nature so as to standardise and make it legible to scientific research. Kropotkin's enthusiasm for statistics, a method of the natural and social sciences his anarchist writings relied so heavily upon when dealing with mass human populations or the complex flow of economics, began at the academy. It became possible for him to think that he could count reality statistically and, crucially, to lift from the data certain patterns, correlations, and social laws. His ability to see society was acquired in this period, a power that allowed him to cast his eyes over rural, urban, national, and even global contexts, diagnose their problems, and provide them with (anarchist) remedies.

Kropotkin's time in the Cossack regiment was also a formative experience, encouraging him to apply his new knowledge and skills out in the field. It gave him a chance to represent reality in maps and to think about populations ethnographically. Moreover, it provided him with his first opportunity to imagine the total application of transportation and communication technology to rural areas, an idea that would later form the backbone of his design of social anarchy. In Siberia he began to criticise government officials not for using statistics to measure local conditions and peoples, but for the inaccuracy and inexactness of their figures. In part two of this thesis I give other examples of this anti-authoritarian tactic that he used when comparing his anarchist ideas to government policy.

Methodology

I critically examine a number of Kropotkin's published works, engaging with an oeuvre spanning roughly half a century from the 1870s to his death in 1921. My goal is not to judge the feasibility of Kropotkin's ideas, to debate whether they worked in the nineteenth century or whether they would work today. My research into his thought works at the interface of anarchist politics and science, searching for the moments when the two contexts meet, interact, and form a dialogue with one another. I investigate the relationship between anarchist politics and broad themes in European scientific and social thought, as well as more specific theories, ideas, concepts, and practices. Kropotkin's work is treated as a site of intersection in which there exist the possibilities for anarchism to be expressed in new ways, possibilities for strands of nineteenth-century anarchist thought to take on new meaning.

My analysis of anarchism's dialogue with science looks at Kropotkin's language. I trace scientific discursive strands in his writings and evaluate their role within his political ideas. Fundamental to this approach is an appreciation of how Kropotkin employs images and tropes in his work that are borrowed straight from modern science, but takes them literally and makes them real in a radical political framework. Kropotkin did not use biomedicine's rich arsenal of themes about health and sickness to represent political ideals and problems; they were, in reality, political ideals and problems. I come to this position as a result of two processes. First, I approach Kropotkin's scientific language with a willingness to take it literally, that is, to take seriously the lifelong trust he placed in scientific knowledge as a literal language. Second, I provide evidence of his literal interpretation of science as a foundation of his political beliefs. To Kropotkin, the state and capitalism literally posed a 'pestilential' threat to humanity. In his mind, prisons were in fact 'nests of infection', where men's physical and psychological health was weakened as a result of disease, not simply places where men were corrupted. We will see that Kropotkin did not refer to crime, suicide, and insanity as social diseases to indicate their political undesirability, but because they were thought of as actual illnesses with biological causes, effects, and remedies. And it will be made clear that revolution, by removing the state and destroying the foundations of capitalism, would in reality sweep away miasma and cleanse society. Biomedical science was not merely a form of language that allowed Kropotkin to express traditional anarchist motifs through metaphor. It was

an expert form of knowledge that literally identified political problems and solutions. It was this literal incorporation of science into his political thought, not simply its images and language for metaphorical use, that had the transformative impact on the way Kropotkin understood anarchism.

This feature of Kropotkin's thought, what I term his 'literalism', is a recurring theme that runs throughout my study. It is a serious point that defines my approach. For Kropotkin's literalism – his attempts to flip, twist, reverse, and invert ideas towards the service of his politics – is not limited to his use of scientific thought. I draw attention to a number of ways that he altered political concepts. In biologising notions of sovereignty, human nature, and political instability from a non-anarchist tradition of European political philosophy, Kropotkin was trying to make real the abstract and metaphorical. Paradoxically, the scientisation of politics (including anarchism), though having the effect of 'grounding' his ideas in the material world, gave his thought a particular fluidity and transience. He was able to make new connections between ideas and provide new interpretations of political concepts.

I take a keen interest in Kropotkin's use of binaries. His writing often revolves around two (though not always explicitly stated as such) antagonistic oppositions. These stand-offs do not necessarily lead to a 'synthesis'; a balance is found or, alternatively, one side gains supremacy over the other. I read Kropotkin's binaries as indicators of the intensity with which science interacted with his political ideas. For on the one hand, his thought is indicative of the anarchist tendency to bring into opposition the desirable and the undesirable. On the other hand, however, Kropotkin employs medical binary oppositions in his thought. I seek to convey how anarchist oppositions, for example between society/state, remained important for Kropotkin, but that they took on qualitatively different aspects as they were superimposed onto new scientific dichotomies. The popular scientific binaries we find in Kropotkin's thought – healthy/sick, regular/defective, normal/pathological – still represented what Kropotkin believed to be politically desirable and undesirable. Moreover, they continued to relate to the traditional anarchist tension between society and state. They also signify, however, the forms of knowledge through which Kropotkin interpreted anarchist politics, the ways in which he understood the threat of the state and the goodness of society, and the scientific character of corruption that occurs at their intersection.

I search for patterns in Kropotkin's thought as it is expressed throughout his life's work. I find some important consistencies that help us understand his political ideas: a biological conception of state power, of the threat of capitalism, and of the purpose of revolution; a statistical conception of society and social law; and an ambition to rationally alter the social realm through the application of scientific knowledge and practices. However, Kropotkin was by no means a neat and tidy thinker (though I think he would have liked to have been thought of in this way). This is particularly evident in his attempt to base anarchism on science. One can notice similar scientific tropes being employed towards a critique of the state in one place, and used to support a theory of revolution in another. Nineteenth-century psychiatry's reworking of the passions, for example, is found in Kropotkin's pessimistic discussion of prisons as well as in his optimistic portrayal of the revolutionary power of crowds. I do not ignore these inconsistencies simply because they fail to add up to a coherent and watertight whole. They were part of his thought and part of what makes him such an intriguing thinker to study. While I offer explanations for Kropotkin's contradictions, I do not become slave to the ambition of solving them. Indeed, Kropotkin's ambivalence is a major theme of this study. His ambivalence is a consequence, I believe, of his vast absorption of scientific thought. It is evident in the tension between the pessimism of his diagnoses and the optimism of his remedies, in his simultaneous quest for freedom and order, and even in his conception of the universe and reality more generally. Kropotkin's uncertainties, insecurities, and ambiguities will not be hidden by this study, but illuminated.

This thesis is split into two parts, a framework that I believe is most conducive to revealing the interplay between the anarchistic and scientific dimensions of Kropotkin's thought. Part one examines Kropotkin's epistemological and methodological worldview. I unpack a number of key instruments from Kropotkin's conceptual toolkit, exploring the scientific theories, categories, and ideas on which he relied to understand and explain natural and social reality. This section is not directly concerned with Kropotkin's anarchism, but with the forms of knowledge, systems of thought, and methodological techniques that allowed him to gain access to, interact with, talk about, and see the world that his political ideas sought to affect. Part two analyses Kropotkin's anarchist politics in light of the scientific ideas and technologies outlined in part one. It displays the nature of his political diagnoses and remedies. Part

two is focused, therefore, on the moments of intersection between the two contexts of anarchism and science, pointing out when Kropotkin's underlying scientific assumptions modified key strands of anarchist political theory, and when anarchist political ideas, in turn, modified science. Thus, part one and part two provide a dialogue between knowledge and politics. The arrangement of this thesis, then, is designed not only to lay bare what Kropotkin described as 'a basis for [anarchism's] principles in the natural sciences of the time', but to understand the effects of that epistemological base on the political structure itself.⁴⁸ This allows my study to mark out a new route through Kropotkin's political ideas which has until now remained untrodden – a pathway that provides new perspectives from which to survey the landscape of Kropotkin's anarchism.

Chapter one explores forms of knowledge to which Kropotkin looked for truth about political phenomena. It outlines his bio-political perspective of societies and individuals. I argue that the main concern for Kropotkin within this bio-political framework was social and individual health. A Lamarckian perspective of biological metamorphosis was central to the ways he thought about human health. It allowed him to look to environments for explanations of health and sickness, to read in human bodies the effects of socio-economic and political surroundings. The chapter discusses how Kropotkin's absorption of Lamarckism stimulated the pessimistic realisation that evolution was not normatively progressive. It ushered in the possibility for regression and degeneration. I claim that Kropotkin assumed the reality of biological decline within species and individual organisms. An area of life where Kropotkin located degeneracy was morality. Criminal psychiatry provided him with medical interpretations of moral health and sickness, a scientific understanding of deviance that no longer relied on notions of sin and evil, but on theories of madness, insanity, and mental pathology.

Forms of knowledge are dependent on methodological practices that grant them access to reality. Chapter two exposes which of these practices Kropotkin employed to reach out and touch the world. I analyse the measuring and counting skills he learned in his youth and I argue that they later proved indispensable to his political attempts to quantify social space and populations. His anarchist claim to know and understand the life of the peasantry, for example, relied on vast amounts of classified statistical

⁴⁸ Kropotkin, *Modern Science*, p. 43.

evidence. Similarly, he shared the assumption of criminologists and psychiatrists that patterns of behavioural and psychological deviance could be ‘lifted out’ of the data of social statistics. The act of reading information ‘off’ statistics was akin to making large-scale, abstract processes visible to political sight. The ability to visualise society was central to Kropotkin’s approach to populations. Finally, I explain the character of social laws Kropotkin believed could be uncovered by statistics. These were not deterministic laws of human nature, but laws of chance and probability that empowered politics. If social laws were conditional and dependent on a range of factors, then, like a scientific experiment, politics could alter the variables within the social milieu and improve the state of society and the human condition.

Chapter three looks at the implications of the meeting of scientific knowledge and statistical measurement for Kropotkin’s conception of society. I explain his view of society as a reified entity, an object with measurable qualities that could be known and made sense of scientifically. Moreover, I contend that Kropotkin conceived of politics as a practice that could intervene into society in order to alter and improve its biological condition. This chapter claims that one of the responsibilities Kropotkin demanded of science was to tame nature. I discuss this idea through the metaphor of gardening (the artificial creation and maintenance of a natural environment) and suggest that Kropotkin thought of politics’ relation to society in these terms. I explain this with reference to Foucault’s idea of the ‘art of government’: a political practice designed to govern human life not by political laws and legislation, but through the tactical management and arrangement of the conditions in which life plays out.

Chapter four deconstructs Kropotkin’s critique of the state. I argue that his brand of anarchism developed a biological understanding of the state’s threat to society and the individual. I explore his writings on state punishment to illustrate this point. Of particular interest is the manner in which Kropotkin redefines the notion of state power in anarchist thought, shifting the emphasis from infliction to infection. I cite and analyse examples where Kropotkin identifies and tracks the epidemiological and transmissible threat of the state with the technology of statistics. As part of his broader bio-political critique, Kropotkin was also fearful of the psychological threat of the state. It could cause insanity and generate moral contagion. Crime was seen as a symptom of this negative psychological impact. With recourse to criminological ideas, Kropotkin medicalised the anarchist idea of moral corruption and displacement. Last, I consider how Kropotkin fed the idea of the state’s psychological threat into his reading

of the battlefield. Unlike other anarchists who were concerned with the loss of liberty or physical destruction, the thrust of Kropotkin's critique comes from his belief that the state turns soldiers mad, inducing in human beings a degenerate regression.

Kropotkin's bio-political theory of state power is carried over into his critique of capitalism. I explore this critique in chapter five. First, I examine Kropotkin's analysis of capitalist environments and argue that what registered most for him was not exploitation, but the biological harm caused to workers. Kropotkin's writings about factories modify anarchist critiques of machinery and drudgery. While these aspects of capitalist production remained important for him, the most condemnable feature of the workshop was the weakening of human health. I argue that Kropotkin's understanding of the values of capitalism was medical. He equated greed and avarice with psychiatric illness. The capitalist class – the bourgeoisie – also came under attack from a biological angle. Here, Kropotkin reversed the charge of degeneracy ascribed to certain social groups in society by conservative scientists and social commentators. Instead of using themes of moral depravity, monstrosity, and biological sickness to condemn alcoholics, criminals, the insane, or anarchists, Kropotkin used these images to target the middle classes.

Chapter six presents Kropotkin's revolutionary responses to the state and capitalism as medical solutions to bio-political danger. I explain how Kropotkin politicised science and radicalised medicine: he turned a medicalised concept of the will into a weapon of political resistance and drew on themes from crowd psychology when expressing his idea of 'the spirit of revolt'. I argue that Kropotkin understood the main purpose of anarchist revolution to be biological regeneration. The removal of the state and capitalism was thought of as a hygienic response to the threat of sickness: the revolution would neutralise the possibilities of disease by eradicating its political and economic causes. The chapter then looks at Kropotkin's projections for the state of anarchy that would follow revolution. I argue that his conception of a desirable future relied on ideas and methods from the scientific contexts outlined in part one. For example, the typical anarchist argument that anarchy will bring order, not disorder, to the world was transformed by Kropotkin's statistical enthusiasm. The statistical mapping of social space, provisions, and people would bring order to the revolutionary process and the post-revolutionary context. The anarchist vision of knowledge dissemination took on a different form in Kropotkin's thought. I point out that he did

not simply call for the general levelling of science, but for the wide popularisation of specific sciences of deviance.

I conclude by reflecting on other ways in which science affected Kropotkin's thought. I explore how the absorption of science provoked oscillations between pessimism and optimism, despair and hope, decline and progress. The application of biomedical knowledge to anarchist politics produced tensions between degeneration and regeneration, sickness and health, the fear of death and the promise of life. I highlight contrasting images of surface and façade, of light and darkness. My conclusion ends with a discussion of an ambivalence experienced by human beings living in a scientific world, an ambivalence maximised by Kropotkin's anarchist project. He was aware that science simultaneously lowers and raises human beings, ascribing to them the status of material creatures while empowering them as the masters of nature. In Kropotkin's political thought, this contradiction had serious implications for the place of power and the possibility of freedom. I suggest that his scientific thinking gave birth to an anarchism which made humanity both master and subject of its own knowledge.

Part One

Scientific Thought, Statistics, and the Social

1 Forms of Knowledge

*The strength of anarchy lies precisely in that it understands all human faculties and all passions, and ignores none.*⁴⁹

Petr Kropotkin, *The Conquest of Bread* (1892).

Kropotkin was born into an age where the scientific study of human beings was widespread and intense. During the course of the nineteenth century, scientific forms of knowledge came to scrutinise people and societies as empirical entities. In 1888, evolutionary biologist George John Romanes (1848-1894)⁵⁰ expressed the commonly held belief that by studying human beings scientifically humanity could come to know itself as part of the natural world:

After centuries of intellectual conquest in all regions of the phenomenal universe, man has at last begun to find that he may apply in a new and most unexpected manner the adage of antiquity – *Know thyself*. For he has begun to perceive a strong probability, if not an actual certainty, that his own living nature is identical in kind with the nature of all other life.⁵¹

Ramones identified a new quality to science. As well as looking outward to explain the world in which we live, it should also peer inward to study ourselves. A great possibility appeared to open up before humanity in the nineteenth century – the possibility to ‘know thyself’ scientifically.

A wide range of scientific ideas appeared that produced knowledge of humanity from a variety of viewpoints. By the time Kropotkin became an adult, biological explanations for the origins and processes of life had emerged, studies of

⁴⁹ Petr Kropotkin, *The Conquest of Bread and Other Writings*, ed. by Marshall Shatz (Cambridge: Cambridge University Press, 1995), p. 96. Originally published in French as *La Conquête du pain* (1892). The book originated as a series of articles that appeared in *Le Révolté* and *La Révolte* in the 1880s.

⁵⁰ On Romanes’ scientific career and ideas, see Joel S. Schwartz, ‘Out from Darwin’s Shadow: George John Romanes’s Efforts to Popularize Science in “Nineteenth Century” and Other Victorian Periodicals’, *Victorian Periodicals Review*, 2, 35 (2002), 133-59; idem, ‘George John Romanes’s Defense of Darwinism: The Correspondence of Charles Darwin and His Chief Disciple’, *Journal of the History of Biology*, 2, 28 (1995), 281-316.

⁵¹ George John Romanes, ‘Mental Evolution in Man’ [1888], in *Literature and Science in the Nineteenth Century*, pp. 279-82 (p. 279).

society were claiming the discovery of social laws and beginning to provide answers for the character of social life, and human thought, emotion, feeling, and even morality had become subject to the illuminating gaze of psychology.

At the turn of the twentieth century, Kropotkin surveyed the development and consequences of nineteenth-century scientific thought in *Modern Science and Anarchism*. He argued that such dramatic changes to the ways and means with which people thought about themselves and the world they inhabited represented nothing less than a profound revolution in knowledge:

The sudden appearance of this wonderful constellation [of knowledge] produced a complete revolution in the fundamental conception of science. Science immediately ventured into new paths. Whole branches of learning were created with prodigious rapidity. The science of life (biology), that of human institutions (anthropology and ethnology), that of understanding, will and passions (physical psychology) [...], soon grew up under our very eyes, striking the mind by the boldness of their generalisations and the revolutionary spirit of their conclusions. What were mere general guesses in the eighteenth century now became facts, proved by the scales and the microscope, and verified by thousands of observations and experiments.⁵²

Kropotkin lived in this new atmosphere of epistemological possibility described in *Modern Science and Anarchism*. This was a world that dealt in the measurements of ‘man’ and the empirically verifiable facts of life. Later he reflected that such possibilities had been unique to the time in which he had lived and ‘could not be dreamt of in antiquity, or in the Middle Ages, or even in the early portion of the nineteenth century’.⁵³ Kropotkin felt keenly that his age was on the threshold of establishing an understanding of human existence unrivalled by earlier generations; people were becoming knowable, their consciousness penetrable, their morality explainable, and their societies intelligible. In this chapter I am going to explore this context of nineteenth-century scientific thought. I will analyse four key forms of knowledge and argue that epistemologically they were central to Kropotkin’s thought.

⁵² Kropotkin, *Modern Science*, p. 16.

⁵³ Kropotkin, *Ethics*, p. 2.

Bio-politics

At the beginning of his thirty-year stay in Britain, Kropotkin immediately set out to show his new, British audience which forms of nineteenth-century scientific knowledge would support his political ideas. He chose the article ‘The Scientific Basis of Anarchy’ (1887) as the vehicle for this exposition. Kropotkin’s initial concern lay with explaining anarchism’s hybrid character: a political philosophy combining the emerging nineteenth-century tendencies of anti-statism and anti-capitalist, working-class-centric socialism. After describing how anarchism merges both tendencies, recognising ‘the dangers of a centralized government’⁵⁴ as well as the ‘chasm between the modern millionaire [...] and the pauper’,⁵⁵ he moved on to a presentation of the core components of its worldview. In contrast to the ‘metaphysical conceptions’ of the utopian state-socialists,⁵⁶ these were based on scientific truths. The conception of anarchism’s fundamental outlook was a scientific approach to human existence. Kropotkin declared that anarchism stood apart from other schools of political thought by being in accordance with evolution’s method of ‘studying human society from the biological point of view’.⁵⁷ In this revealing article, Kropotkin wanted to show that the basis of his political project was biological. His first meaningful act as an anarchist in British intellectual society was to place the body at the centre of politics.

Before the nineteenth century the body had long been part of the language of politics. The individual human body was often used as a template for political design. The ‘body politic’ establishes a corporeal form for politics that represents and at the same time comprises political relations, structures, and functions.⁵⁸ One thinks of French Artist Abraham Bosse’s (c. 1602-1676) famous engraving for Thomas Hobbes’ (1588-1679) *Leviathan* (1651) in which atomised individuals are absorbed together to

⁵⁴ Petr Kropotkin, ‘The Scientific Basis of Anarchy’ [1887], in *Anarchism: Its Philosophy and Scientific Basis As Defined by Some of Its Apostles*, ed. by Albert R. Parsons (Chicago: Mrs. A. R. Parsons, 1887), pp. 111-23 (p. 114). Originally appeared in *The Nineteenth Century*.

⁵⁵ *Ibid.*, p. 113.

⁵⁶ *Ibid.*, p. 112.

⁵⁷ *Ibid.*, p. 116.

⁵⁸ On corporeal metaphors applied to political and social thinking, see Antoine de Baecque, *The Body Politic: Corporeal Metaphor in Revolutionary France, 1770-1800*, trans. by Charlotte Mandell (Stanford, California: Stanford University Press, 1997); A. D. Harvey, *Body Politic: Political Metaphor and Political Violence* (Newcastle: Cambridge Scholars Publishing, 2007); Claire Rasmussen and Michael Brown, ‘The Body Politic as Spatial Metaphor’, *Citizenship Studies*, 2, 9 (2005), 469-84; Andreas Musolf, ‘Political metaphor and *bodies politic*’, in *Perspectives in Politics and Discourse*, ed. by Urszula Okulska and Piotr Cap (Amsterdam and Philadelphia: John Benjamins Publishing Company, 2010), pp. 23-41.

form a colossal, supra-personal political being. In her study of corporeal metaphors in late eighteenth-century France, Antoine de Baecque describes this image as the best illustration of the ‘royalist body’.⁵⁹ Hobbes’ corresponding literary description of the political body is given on the opening page of his book:

That great LEVIATHAN called a COMMON-WEALTH, or STATE [...] is but an Artificiall Man; though of greater stature and strength than the Naturall, for whose protection and defence it was intended; and in which, the *Soveraignty* is an Artificiall *Soul*, as giving life and motion to the whole body; The *Magistrates*, and other *Officers* of Judicature and Execution, artificiall *Joynts*; *Reward* and *Punishment* [...] are the *Nerves*, that do the same in the Body Naturall; The *Wealth* and *Riches* of all the particular members, are the *Strength* [...]; *Counsellors*, by whom all things needfull for it to know, are suggested unto it, are the *Memory*; *Equity* and *Lawes*, an artificiall *Reason* and *Will*; *Concord*, *Health*; *Sedition*, *Sickness*; and *Civil war*, *Death*.⁶⁰

Michel Foucault explains the role of the body in *Leviathan* as a ‘juridico-political metaphor’.⁶¹ It acts as an image by which to represent the purposes of the political state’s different parts and how they relate to one another through their operation. Yet, the body politic does more than describe the functionality of the state. In Hobbes’ case, the body image conveys the unity necessary for the success of his idea of the civil state and the contractual binding it demands of its authors. Moreover, in its mortality, the body suggests the finiteness of the political, that is, the very real possibility of its dissolution.

Over a century later, Jean-Jacques Rousseau (1712-1778) employed the juridico-political metaphor of the body politic in *The Social Contract* (1762):

The principle of political life resides in the Sovereign authority. The legislative power is the heart of the state, the executive power is its brain, which gives movement to all the parts. The brain may become paralyzed and the individual

⁵⁹ de Baecque, *The Body Politic*, p. 90.

⁶⁰ Thomas Hobbes, *Leviathan* [1651], ed. by Richard Tuck (Cambridge: Cambridge University Press, 1991), p. 9. For more on Hobbes, see P. Ahrens-dorf, ‘The fear of death and the longing for immortality: Hobbes and Thucydides on human nature and the problem of anarchy’, *American Political Science Review*, 3, 94 (2000), 579-93; C. Tarlton, “‘To avoyd the present stroke of death’: Despotical dominion, force, and legitimacy in Hobbes’s ‘Leviathan’”, *Philosophy*, 288, 74 (1999), 221-45.

⁶¹ Michel Foucault, ‘The Dangerous Individual’, in *Michel Foucault: Politics, Philosophy, Culture, Interviews and Other Writings 1977-1984*, ed. by Lawrence D. Kritzman (New York and London: Routledge, Chapman and Hall Inc., 1988), pp. 125-51 (p. 134).

still live. A man can remain an imbecile and still live: but as soon as the heart has stopped to function, the animal is dead.⁶²

The metaphor of the body politic performs similar roles for both thinkers. It enables them, for example, to articulate their key political belief about the primacy of sovereign power: the sovereign bestows life on the state and, without it, the political existence of human beings disappears. A more general overlap between the two thinkers' portrayal of the body politic, however, is that the 'body natural', as Hobbes puts it, serves to represent the *artificial* body of the political state. The health of the state points not to the prolongation of life as it does in the natural body, but to the perpetuation of an artifice. The sickness and possible death of the state are not akin to processes in the human body but, conversely, signify the disintegration of the political and a worrying, anti-political return to the natural.

The declaration in 'The Scientific Basis of Anarchy' that anarchism studies society from a biological perspective could be mistaken as an example of Kropotkin using the juridico-political metaphor of the body politic in his late nineteenth-century political philosophy. But Kropotkin was not referring to the artifice of politics. With what he retrospectively described as the 'rapid development of biology' in the nineteenth century, the idea of the body in Western political thought underwent a profound transformation that manifested itself in his political project.⁶³ The adjective and the noun of the body politic replaced one another. The imagery of the body politic, depicting a body of a political nature, gave way to the reality of a politic of a bodily or biological nature.

Kropotkin was less concerned with explaining the sovereign, legislative, and executive power of political systems through metaphors of the body politic, than with the biological nature of society. He understood civil societies not as artificial structures bound together to provide human beings with political security, but as biological entities, as populations constituted by living organisms. Kropotkin made it clear that his engagement with the political employed a method suitable for the purpose: 'a new [biological] method of investigation for the better understanding of [...] the life and

⁶² Jean-Jacques Rousseau, *The Social Contract and other later political writings*, ed. by Victor Gourevitch (Cambridge: Cambridge University Press, 1997), p. 109. On Rousseau's political thought, see Timothy W. Luke, 'On Nature and Society: Rousseau versus the Enlightenment', *History of Political Thought*, 2, 5 (1984), 211-43; Francis Moran, 'Between Primates and Primitives: Natural Man as the Missing Link in Rousseau's Second Discourse', *Journal of the History of Ideas*, 1, 54 (1993), 37-58.

⁶³ Kropotkin, *Ethics*, p. 1.

evolution of societies'.⁶⁴ The idea that political states and human societies did not represent the body natural but were, in reality, biological phenomena underpinned his life's work. He framed his political ideas within an ontology that saw 'all the agglomerations of matter in the universe [...] as something *living*'.⁶⁵

To use again the words of Foucault, who traces the shifting place of the body in Western political thought from the juridico-political body politic to the organic social body: when Kropotkin conceived of society, he saw a 'biological reality'.⁶⁶ With his respect for evolutionary theory's assignment to man of its status as a species, Kropotkin's view of political populations concerned itself with an evolving, adapting, mutating living mass. He argued that biological science from 1856 to 1862, especially Darwin's *On the Origin of Species* (1859), had brought about 'so complete a revolution in all our ways of looking at Nature, at life in general, and at *the life of human societies* that no similar revolution has ever taken place in the whole history of science in the last twenty centuries [my emphasis]'.⁶⁷ Pinpointed historically by Kropotkin as a distinct feature of the post-Darwinian world, and proudly adopted as the starting point for his own political thought, this new way of looking at human societies that arose in the nineteenth century was bio-political. He recognised the far-reaching implications of the theory of evolution for political thought. Its impact extended beyond understandings of the animal world and completely transformed how politics perceived the social life of humans. The political co-existence of people was no longer about structures, but about living beings.

Alongside the political vision of the social body, Kropotkin's underlying biological assumptions about politics were indicative of new ways of thinking about the individual living in political societies. As John Marks discusses, the growth of biology in the nineteenth century provoked redefinitions of the idea of political 'man' and the citizen. Marks describes how 'the legal subject [was] overlaid with the crucial figure of the "living being" and the fact of existing as a living being in a particular environment began to register as a political preoccupation'.⁶⁸ For Kropotkin, an individual's political existence represented a biological fact. He considered 'society as

⁶⁴ Kropotkin, *Modern Science*, p. 26.

⁶⁵ Kropotkin, *Ethics*, p. 3.

⁶⁶ Foucault, 'The Dangerous Individual', p. 134.

⁶⁷ Kropotkin, *Modern Science*, p. 22.

⁶⁸ John Marks, 'Michel Foucault: Biopolitics and Biology', in *Foucault in an Age of Terror: Essays on Biopolitics and the Defence of Society*, ed. by Stephen Morton and Stephen Bygrave (Basingstoke and New York: Palgrave Macmillan, 2008), pp. 88-105 (p. 96).

an aggregation of organisms',⁶⁹ with each 'human being [...] a compound of nervous and cerebral centers'.⁷⁰ He thought about the individual as a biological complex. 'Each individual is a cosmos of organs, each organ is a cosmos of cells, each cell a cosmos of infinitely smaller ones'.⁷¹ Kropotkin's individuals are 'overlaid', as Marks says in the above quotation, with the identity of organisms whose bodies are the main concern of his political thought.⁷²

The empirical, living reality of individuals also registered for Kropotkin's contemporaries as a political preoccupation. Russian Populist Nikolai Mikhailovskii (1842-1904), for example, viewed the project to transform the socio-economic landscape of late Imperial Russia through the lens of the individual's body. In 1869, he centred his criticism of Herbert Spencer's (1820-1903) view of social progress on the disproportionate physiological development it would cause in the individual organism inhabiting such a political setting:

[Spencer's] society has taken a step from homogeneity toward heterogeneity, but the individuals who make it up have moved, on the contrary, from heterogeneity to homogeneity. With some, the muscular system has begun to develop at the expense of the nervous system, and with others, vice versa.⁷³

Mikhailovskii's theory of a homogenous social organism, on the other hand, was designed to have the opposite effect on its constituent members, enabling them to live with their 'whole [biological] being'.⁷⁴ He conceived of political progress biologically, as the 'fullest possible and the most diversified division of labor among man's organs

⁶⁹ Kropotkin, 'The Scientific Basis of Anarchy', p. 112.

⁷⁰ Petr Kropotkin, 'Anarchist Morality', in *Kropotkin's Revolutionary Pamphlets*, pp. 80-113 (p. 112). Originally published in French as *La Morale anarchiste* (1891). Originally appeared in *La Révolte* as 'La morale anarchiste' (1890) and 'Encore la morale' (1891).

⁷¹ Petr Kropotkin, 'Anarchism: Its Philosophy and Ideal', in *Kropotkin's Revolutionary Pamphlets*, pp. 115-44 (p. 119). Originally published in French as *L'Anarchie, sa philosophie, son idéal* (1896).

⁷² Twentieth-century anarchist thinkers also thought about the political life of human beings in biological terms. Carissa Honeywell explores how Herbert Read, Alex Comfort, Paul Goodman, Colin Ward, and Murray Bookchin supported political values of uniqueness and personality 'with concrete biological conceptions of selfhood'. Carissa Honeywell, 'Bridging the Gaps: Twentieth-Century Anglo-American Anarchist Thought', in *Continuum Companion to Anarchism*, ed. by Ruth Kinna (New York: Continuum, 2012), pp. 111-39 (p. 129).

⁷³ Nikolai Mikhailovskii, 'What is Progress?' [1869], in *Russian Philosophy*, ed. by James M. Edie, James P. Scanlan, and Mary-Barbara Zeldin, 3 vols (Chicago: Quadrangle Books, 1965), II, pp. 177-87 (p. 178). On Mikhailovskii's life and thought, see James H. Billington, *Mikhailovsky and Russian Populism* (Oxford: Clarendon Press, 1958). For an overview of Mikhailovskii's broader social philosophy, see James P. Scanlan, 'Populism as a Philosophical Movement in Nineteenth-Century Russia', *Studies in Soviet Thought*, 3, 27 (1984), 209-23. On his theory of progress, see Andrzej Walicki, *A History of Russian Thought: From the Enlightenment to Marxism*, trans. by Hilda Andrews-Rusiecka (Stanford, California: Stanford University Press, 1979), pp. 252-65.

⁷⁴ *Ibid.*, p. 179.

and the least possible division of labor among men'.⁷⁵ Though sharing a number of political aspirations, Kropotkin's affinity with Russian Populist thinkers existed on a more general level where the success of socio-economic and political transformation could be measured in the body of the human being.

Kropotkin's political thought is a lucid example of how life became the object of politics in the nineteenth century. Owing to this development and the fact that politics seemed to deal exclusively in the natural, he based his methodology on that of the natural sciences:

As man is a part of Nature, as his personal and social life is a natural phenomenon, just as the growth of a flower, or the evolution of life in societies of ants or bees – there is no reason why we should, when we pass from the flower to man, or from a village of beavers to a human city, abandon the method which till then has been so useful.⁷⁶

Kropotkin was adamant that no method other than the empirical method of the natural sciences was suitable for a politics that engaged with the biological.

Within this bio-political framework, the main concern for Kropotkin as he apprehended human societies and their individual constituents was health. He believed that the final goal of politics was the improvement of the health of the individual and social body. Through his address to the British public in 'The Scientific Basis of Anarchy', he confirmed that anarchism's concern was 'for the welfare of the [human] species'.⁷⁷ Later, in *The Conquest of Bread*, Kropotkin implied that the purpose of politics is to provide welfare to human populations. He understood this concept in biological terms. The political problem on which the book seeks to act is that of providing 'everyone [...] before everything, *the right to live*'.⁷⁸ The book's designs and plans for social reconstruction are directed towards improving the health of communities. Although a biological concern, there is a sense of dignity acquired from healthy living. Kropotkin compared the 'right to live' to the 'the right to work', which he believed had misled the people during the 1848 European revolutions. By contrast, his biological conception of the political mission aimed to meet the real needs of people: the needs of the organism. He saw politics as a device 'to satisfy all wants, to

⁷⁵ Ibid., p. 187.

⁷⁶ Kropotkin, *Modern Science*, p. 40.

⁷⁷ Kropotkin, 'The Scientific Basis of Anarchy', p. 112.

⁷⁸ Kropotkin, *The Conquest of Bread*, p. 28.

meet all needs [...] to ensure to society as a whole its life'.⁷⁹ Rather than wealth, politics for Kropotkin was primarily about health.

The principle aspiration of politics to improve social health and administer life was far from unique to Kropotkin. His work reflects a more general development taking place across the nineteenth-century Western political landscape whereby government officials, politicians, and scientists came to view healthy societies as the final end of the political process. As I alluded to in the introduction to this thesis, Chadwick's classic study on Britain's sanitary condition was indicative of this new way of thinking about populations of political territories that emerged during Kropotkin's lifetime. Chadwick's study was a biological assessment of a human mass, finding political significance in its health, sicknesses, and in the communication of disease. Nineteenth-century planning projects of some of Europe's major cities were in many ways medical reactions to pathogenic environments. Physician and epidemiologist John Snow (1813-1858) and engineer Joseph Bazalgette (1819-1891) played crucial roles in official responses to the Soho cholera outbreak (1854) and the Great Stink of London (1858). Their scientific knowledge was critical to the political task of improving the health of the capital's inhabitants through fundamental changes to its water and waste systems.⁸⁰ In France, one of the political demands Louis Napoléon Bonaparte (1808-1873) placed on Georges-Eugène Haussmann (1809-1891) and his project to 'renovate' Paris between 1850 and 1870 was to clean and purify the urban space with new sewers and aqueducts.⁸¹ Cleansing social environments and improving health became part of a modern state's political responsibility.

Foucault shows that it was in the nineteenth century when phenomena such as 'health, sanitation, birth-rate, longevity [and] race' became political problems for European states, occupying an 'expanding place' among their political

⁷⁹ Ibid., p. 29.

⁸⁰ On the life and times of John Snow and his role in reconceptualising the transmission of cholera, see Sandra Hempel, *The Medical Detective: John Snow and the Mystery of Cholera* (London: Granta Books, 2006). On Joseph Bazalgette and the Great Stink, see Stephen Halliday, *The Great Stink of London: Sir Joseph Bazalgette and the Cleansing of the Victorian Capital* (Stroud: The History Press, 2008).

⁸¹ Thomas Hall, *Planning Europe's Capital Cities: Aspects of Nineteenth-Century Urban Development* (London and New York: Routledge, 2010), p. 76. For more on the history of the political concern of public health in France, see David B. Barnes, *The Great Stink of Paris and the Nineteenth-Century Struggle against Filth and Germs* (Baltimore: The Johns Hopkins University Press, 2006); Matthew Ramsey, 'Public Health in France', in *The History of Public Health and the Modern State*, ed. by Dorothy Porter (Amsterdam and Atlanta: Editions Rodopi B. V, 1994), pp. 45-118 (pp. 45-86).

responsibilities.⁸² Politics no longer dealt simply ‘with legal subjects over whom the ultimate dominion was death, but with living beings [...] and would have to be applied at the level of life itself’.⁸³ This represented a significant change to the task of politics that shifted its attention away from traditional notions of sovereignty and military might towards a biological conception of collective welfare. James C. Scott describes this development:

This new conception [...] represented a fundamental transformation. Before then, the state’s role had been largely confined to those that contributed to the wealth and power of the sovereign [...]. The idea that one of the central purposes of the state was the improvement of all the members of society [...] was quite novel. [Although] a state that improved its population’s skills, vigor, civic morals, and work habits would increase its tax base and field better armies [...], in the nineteenth century, the welfare of the population came increasingly to be seen, not merely as a means to national strength, but as an end in itself.⁸⁴

Kropotkin shared these broad bio-political aspirations of nineteenth-century politics. He explained that the population’s right to live does not simply grant the possibility of a society becoming more efficient or more powerful; the right to live ‘means the possibility of living like human beings’.⁸⁵ As was the case for the states of Europe in the nineteenth century, the health of populations for Kropotkin was an end in itself.

In order for bio-politics to be effective it had to enlist the curative powers of medicine. Because politics was a matter of life, it was common for political thinkers to call on the medical expertise of doctors, physicians, and other medical professionals when developing their theories of how human beings could and should live. In ‘The Connection of the Biological Sciences with Medicine’ (1881), for example, Huxley argued that the goal of politics to improve and maintain the health of living political subjects required the expertise of medical knowledge. “‘Medicine’ not merely denotes a kind of knowledge’, he claimed, ‘but it comprehends the various applications of that knowledge to the alleviation of the sufferings, the repair of the injuries, and the

⁸² Michel Foucault, ‘The Birth of Biopolitics’, in *The Essential Foucault: Selections from The Essential Works of Foucault 1954-1984*, ed. by Paul Rabinow and Nikolas Rose (New York and London: The New Press, 2003), pp. 202-07 (p. 202).

⁸³ Michel Foucault, *The History of Sexuality*, trans. by Robert Hurley, 3 vols (London: Penguin, 1998), I, pp. 142-43.

⁸⁴ James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven and London: Yale University Press, 1998), p. 91.

⁸⁵ Kropotkin, *The Conquest of Bread*, p. 30.

conservation of the health, of living beings'.⁸⁶ For some later nineteenth-century Russian thinkers, medicine had the same applicable, bio-political qualities identified by Huxley. During the 1860s, a new generation of radical political thinkers in Russia sought to apply the rational science of medicine to the social problems of a modernising empire. In the changing cultural and social atmosphere of what Susan Morrissey describes as Russia's 'new world', where 'science and openness became catchwords of the era',⁸⁷ men such as Nikolai Chernyshevskii (1828-1889), Ivan Turgenev (1818-1883), and Dmitrii Pisarev (1840-1868) lauded the political power of medicine to cure the social body of disease in their literary, political, and philosophical writing.

Later, as Kropotkin began to write extensively for *Le Révolté*, he often advocated a similar connection between medicine and politics that had inspired his compatriots during the 1860s. In 'To the Young', he argued that any political approach to the individual and to human populations required the authority of biological science if they were to stay healthy: 'Take a look at what science has done to elaborate the rational foundations of physical and moral hygiene. It tells you how we must live to preserve our bodily health, how we can maintain in good condition our human collectivities'.⁸⁸ Kropotkin thought about politics as the application of expert medical knowledge to biologically conceived social problems. He believed that biomedical science should not merely make suggestions about how individuals and societies should live; but that it should dictate to politics, that is, 'tell' human beings how to organise their affairs. The implications for Kropotkin's anarchist political ideas of this scientific imperative will be explored in part two of this thesis, when I examine how his conception of medicine's political utility interacted with his critique of the status-quo and the task of its modification.

⁸⁶ Thomas H. Huxley, 'The Connection of the Biological Sciences with Medicine' [1881], in Huxley, *Science and Education* (London: Macmillan and Co., 1902), pp. 347-73 (pp. 347-48).

⁸⁷ Susan Morrissey, *Suicide and the Body Politic in Imperial Russia* (Cambridge: Cambridge University Press, 2006), p. 13.

⁸⁸ Kropotkin, 'To the Young', p. 47.

Evolutionism

As I have shown, ‘The Scientific Basis of Anarchy’ presented the bio-political perspective of Kropotkin’s anarchism. His description also involved showing that politics was a practice that dealt with living beings whose individual bodies and social existence were liable to metamorphosis. From this political outlook, the anarchist ‘follows [...] the course traced by the modern philosophy of evolution’.⁸⁹ Politics was concerned with an idea of humanity’s natural biological state and which features of that state cause changes to occur in the individual and the species over time. Kropotkin insisted that the anarchist ‘studies human society as it is now and was in the past, [trying] to discover its tendencies, past and present’.⁹⁰ Kropotkin’s bio-political approach required an appreciation of what is natural in man alongside an explanation for the transformations that may occur in his constitution.

Political thought has often endowed humanity’s relation to nature with political significance.⁹¹ Political thinkers developed ideas about the natural state of human existence and how, from this original state, it has developed. The seventeenth century is host to two of the most well known relationships established between natural and political man. In *Two Treatises of Government* (1689), John Locke (1632-1704) argued that in order to ascertain how man developed into a political being his natural condition must first be laid bare: ‘To understand Political Power right, and derive from it its Original, we must consider what State all Men are naturally in’.⁹² Earlier in the century Hobbes envisaged a nightmarish original state of man:

Where there is no [political] power [...men...] are in that condition which is called Warre; and such a warre, as is of every man, against every man [...]. Whatsoever is consequent to a time of Warre, where every man is Enemy to every man; the same is consequent to the time, wherein men live without other security, than what their own strength, and their own invention shall furnish them withall. In such a condition [...] the life of man [is] solitary, poore, nasty, brutish, and short.⁹³

⁸⁹ Kropotkin, ‘The Scientific Basis of Anarchy’, p. 112.

⁹⁰ Ibid.

⁹¹ On the idea of origins in political thought, particularly as ‘narratives about the beginnings of politics and power’, see Joanne H. Wright, *Origin Stories in Political Thought: Discourses on Gender, Power, and Citizenship* (Toronto, Buffalo, and London: University of Toronto Press, 2004).

⁹² John Locke, *Two Treatises of Government* [1689], ed. by Peter Laslett (Cambridge: Cambridge University Press, 1960), p. 269. On Locke, see Joshua Cohen, ‘Structure, Choice, and Legitimacy: Locke’s Theory of the State’, *Philosophy and Public Affairs*, 4, 15 (1986), 301-24.

⁹³ Hobbes, *Leviathan*, pp. 88-89.

Hobbes' conception of humanity's state of nature was the driving force behind its development as a political being. Although man made, the commonwealth owed its existence to the fundamental character of our nature. The *raison d'être* of politics was to eradicate the uncertainty plaguing the natural life of men and rid them of the constant fear of death. This process of change in human life, from a lawless, uncivilised existence to a political, civilised state, was a product of Hobbes' axiomatic view of 'original man': our nature propels our transformation.

At the turn of the twentieth century, Kropotkin set out in *Mutual Aid: A Factor of Evolution* (1902) those features of humanity's natural state he believed were behind its metamorphosis. By this time a new element had been injected into the discussion: evolutionary science. As he wrote in the chapter entitled 'Mutual Aid Among Savages', 'science has made some progress since Hobbes's time, and [...] we have safer ground to stand upon than [his] speculations'.⁹⁴ This safer ground was represented by the recently developed knowledge of humanity's biological evolution as a species. Kropotkin believed this knowledge had given a new, rigorous means of investigation to the study of life so distinct in its empirical prowess to Hobbes' speculative mind. Hobbes' largely hypothetical state of nature was replaced by expert knowledge emanating from 'zoology and palaeo-ethnology' which was uncovering the 'unmistakable traces of [humanity's] previous existence'.⁹⁵ Evolutionary science offered to political philosophy fresh, verifiable theories of humanity's original state of nature within which it supposed to find the factors impelling our individual and collective transformation. Ideas about 'civilised man's' origins, the character of his natural existence, and the triggers of his modification posed questions which now looked to evidence accumulated from empirical science.

As Kropotkin entered into late nineteenth-century evolutionary discussions, the political idea of a state of nature, which had concerned Hobbes, Locke, and Rousseau in previous centuries, had become scientised. His ideas about the biological metamorphosis of individuals and societies were formed in an atmosphere where Hobbes' vision of humanity's anarchic, lawless, and dangerous natural condition was being expressed as a posited empirical reality driving society's mutation. Popular images and metaphors of natural man – Spencer's 'survival of the fittest', Darwin's

⁹⁴ Petr Kropotkin, *Mutual Aid: A Factor of Evolution* [1902], ed. by Paul Avrich (London: Allen Lane and The Penguin Press, 1972), p. 84. This book originated as a series of articles that appeared in *The Nineteenth Century* in the 1890s.

⁹⁵ *Ibid.*, p. 85.

‘struggle for existence’, Huxley’s ‘gladiator’s show’⁹⁶ – were offered as the products of scientific research.

It is well documented that although Kropotkin’s ideas about the natural state of humanity were developed within this climate of late Victorian evolutionary discussion, he rejected the notion that intraspecific struggle was the dominant factor of human evolution.⁹⁷ One explanation for this difference is that Kropotkin’s ideas were formed in the different national, cultural, and geographical environment of the Russian Empire. Daniel P. Todes explores how Darwinism was received in Russia.⁹⁸ He shows that although scientists and radicals in the 1860s and 1870s were generally enthusiastic about the scientific quality of Darwinism, they tended to reject Darwin’s Malthusianism and his emphasis on intraspecific struggle in favour of interspecific struggle and intraspecific cooperation.⁹⁹ According to Todes, before Huxley’s ‘The Struggle for Existence in Human Society’ (1888) had appeared, Kropotkin’s experiences in Siberia in the 1860s had already led to his opinion about humanity’s natural state that was common to the Russian context. Kropotkin’s Siberian travels between 1862 and 1867 differed greatly from those of Darwin in the 1830s. In the Siberian wilderness he saw no sign of struggle within species, but cooperation. He did not witness the overcrowding Darwin had seen in the tropics, but saw only the sparseness of nature.¹⁰⁰

A second interpretation holds that while Kropotkin’s ideas on evolution may have taken shape during his formative experiences in Siberia, the theory of mutual aid was part of a broader political response to what he saw as the decline of revolutionary anarchism. Kinna shows that although Kropotkin made contributions to evolutionary theory, his purpose in turning to biology in the 1890s was to challenge the ascendancy

⁹⁶ Thomas H. Huxley, ‘The Struggle for Existence in Human Society’ [1888], in Huxley, *Evolution and Ethics and Other Essays* (Honolulu, Hawaii: University Press of the Pacific, 2002), pp. 195-236 (p. 200).

⁹⁷ See Paul Avrich, ‘Editor’s Introduction’, in *Mutual Aid*, pp. 1-10; Crowder, *Classical Anarchism*, pp. 160-66; Peter Marshall, *Demanding the Impossible: A History of Anarchism* (Oakland: PM Press, 1992), pp. 318-23; Alexander Vucinich, *Darwin in Russian Thought* (London and California: University of California Press, 1988), pp. 346-55.

⁹⁸ Daniel P. Todes, *Darwin without Malthus: The Struggle for Existence in Russian Evolutionary Thought* (New York and Oxford: Oxford University Press, 1989). See also Vucinich, *Darwin in Russian Thought*, pp. 330-46; James Allen Rogers, ‘The Reception of Darwin’s Origin of Species by Russian Scientists’, *Isis*, 4, 64 (1973), 484-503; idem, ‘The Russian Populists’ Response to Darwin’, *Slavic Review*, 3, 22 (1963), 456-68; Morrissey, *Suicide*, p. 188.

⁹⁹ *Ibid.*, pp. 24-38.

¹⁰⁰ *Ibid.*, pp. 126-30.

of Marxism and anarchism's growing obsession with individualism.¹⁰¹ As part of a defensive but also revitalising political project, Kropotkin's evolutionism was not simply a scientific idea, but a response to particular political challenges.

Kinna brings to light the fact that Kropotkin's ideas on evolution opened up political possibilities for anarchist thought. Although Todes provides important insights into the influence of the Russian context, as well as analysing Petr's correspondence with his brother, Aleksandr, his work neglects the political implications of Kropotkin's biological thought.¹⁰² For Kropotkin's views about humanity's nature and its propensity to transform biologically were intimately connected to his political thought. He never lost sight of the applicability of evolution to anarchism.

A fundamental aspect of Kropotkin's evolutionary thought that had serious ramifications for his political ideas was an emphasis on 'conditions' and 'environment' as powerful forces affecting an organism's biological make-up. As I will explore in part two, Kropotkin's scientific interpretation of the environment as an agent was crucial to how he thought politically about the state, capitalism, and revolution. His fascination with interactions between body and surroundings owed a debt to the biological thought of Lamarck, in particular his two premises on adaptation and inheritance.¹⁰³ The first, 'Direct Action', argued that individual organisms could acquire characteristics during their lifetime as a result of an adaptation to their environment. The second, 'The Inheritance of Acquired Characteristics' stressed that such adaptations could, and often were, visited upon progeny through inheritance, provided the features were present in both parents. In *Zoological Philosophy: An Exposition with Regard to the Natural History of Animals* (1809) Lamarck stated this theory:

All the acquisitions or losses wrought by nature on individuals, through the influence of the environment [...], are preserved by reproduction to the new

¹⁰¹ Kinna, 'Kropotkin's Theory of Mutual Aid in Historical Context'.

¹⁰² Todes is more interested in exploring Kropotkin's ideas on evolution as a distinctly Russian response to Darwinism than he is with their connection to politics and anarchist thought. For another example of this, see Daniel P. Todes, 'Darwin's Malthusian Metaphor and Russian Evolutionary Thought, 1859-1917', *Isis*, 4, 78 (1987), 537-51 (pp. 546-48).

¹⁰³ Although Kropotkin was explicit about his Lamarckism in a series of articles written for *The Nineteenth Century and After* between 1910 and 1915, he was already writing and thinking in terms of adaptation and inheritance in his political work of the 1880s. This view is supported by Girón, who highlights the fact that Kropotkin had discussed Lamarck's ideas in the early 1890s. Moreover, and more importantly for this study, Kropotkin was thinking about political ideas 'bio-socially' in the 1880s. Álvaro Girón, 'Kropotkin Between Lamarck and Darwin: The Impossible Synthesis', *Asclepio*, 1, 55 (2003), 189-213 (pp. 198-99).

individuals which arise, provided that the acquired modifications are common to both sexes, or at least to the individuals which produce the young.¹⁰⁴

Kropotkin's thought is in tune with Lamarck's view that 'The influence of the environment as a matter of fact is in all times and places operative on living bodies'.¹⁰⁵ As we shall see, Kropotkin's argument was not one that favoured nurture over nature, but one that looked to an organism's surroundings when explaining biological change. The environment could be 'read' in the body.

These beliefs helped Kropotkin think about political environments. He saw political existence as a process in which organisms, individual and social, could respond and adapt to their socio-economic, cultural, and political settings. 'Direct Action' suggested that people, as living beings, would undergo modifications as a result of an interaction with man-made external conditions. In 'Anarchism: Its Philosophy and Ideal' (1896), he showed his belief in 'Direct Action' and presented it as a scientific fact:

The zoologists and botanists study the individual – his life, his adaptations to his surroundings. Changes produced in him by the action of drought or damp, heat or cold, abundance or poverty of nourishment, of his more or less sensitiveness to the action of exterior surroundings will originate a species; and the variations of species are now for the biologist but resultants – a given sum of variations that have been produced in each individual separately. A species will be what the individuals are, each undergoing numberless influences from the surroundings in which they live, and to which they correspond each in his own way.¹⁰⁶

In 'The Response of Animals to their Environment' (1910), Kropotkin stressed that adaptation occurred during an individual's lifespan and produced definite results. As a force operating on living bodies, the environment is responsible for the detailed changes experienced in biological structures:

This [...] is due to the influence of the new surroundings upon the cells, the tissues [...] or the blood of the animals placed in these surroundings. It

¹⁰⁴ Jean-Baptiste Lamarck, *Zoological Philosophy: An Exposition with Regard to the Natural History of Animals* [1809], trans. by Hugh Elliot (London: Macmillan and Co., 1914), p. 113. For a concise interpretation of Lamarck's views of biological change in individuals and species, see Richard W. Burkhardt, Jr., *The Spirit of System: Lamarck and Evolutionary Biology* (Cambridge, Massachusetts, and London: Harvard University Press, 1995), pp. 143-85.

¹⁰⁵ *Ibid.*, p. 106.

¹⁰⁶ Kropotkin, 'Anarchism: Its Philosophy and Ideal', p. 118.

produces definite changes of form, colours, habits, and so on, and these changes are so substantial as to affect even those fundamental characters which were formerly considered unchangeable.¹⁰⁷

With these ideas, Kropotkin could interpret the political existence of human beings as an on-going biological process. As the environments in which people lived were often political settings – created and modified spaces accommodating human life – Kropotkin understood political environments as the physical settings that induced changes in the human organism. This meant that political settings could be judged by studying the biology of the individual organisms inhabiting them.

A political environment's influence on people, however, did not end with its capacity to produce changes of a physiological, psychological, and behavioural character. Not only could organisms undergo adaptations to environments during their lifetime, but these acquired characteristics could be passed down hereditarily to their offspring. Kropotkin summarised this opinion in 'Inherited Variation in Animals' (1915). 'They [acquired characteristics] *are* transmitted from the parents to their offspring, and the doubts are now only about *the mode of transmission* of the changes from one generation to the next – not about the fact itself'.¹⁰⁸ Again, the emphasis on the power of the environment to shape life was a view of a natural, biological process that, once applied to human existence, became explicitly political. Not only could the effects of social environments sink deeply into the intimate structure of the human being, but their characteristics could be inscribed on the bodies and traits of progeny and, thus, perpetuated through the future ages of the human species.

Somewhat paradoxically, the brute biological qualities Kropotkin saw in humanity's natural condition allowed him to argue for a fluid, changeable, and unfixed description of human nature. If, as he believed, a fundamental human quality was a necessity to adapt to its environment and a capacity to bestow these adaptations to progeny, then its nature, habits, and biological structure at any time were not inherent qualities, but resultants. As he stressed in 'Anarchism: Its Philosophy and Ideal', 'man is nothing but a resultant, always changeable'.¹⁰⁹ Nathan Jun argues that other than biological qualities, there is no essentialism to human nature in Kropotkin's thought.

¹⁰⁷ Petr Kropotkin, 'The Response of Animals to Their Environment' [1910], in *Evolution and Environment*, ed. by George Woodcock (Montréal, New York, and London: Black Rose Books, 1995), pp. 159-83 (pp. 159-60). Originally appeared in *The Nineteenth Century*.

¹⁰⁸ Petr Kropotkin, 'Inherited Variation in Animals' [1915], in *Evolution and Environment*, pp. 223-42 (p. 225). Originally appeared in *The Nineteenth Century*.

¹⁰⁹ Kropotkin, 'Anarchism: Its Philosophy and Ideal', p. 119.

He is always becoming.¹¹⁰ It is, in fact, Kropotkin's basic Lamarckian reading of humanity's constant biological qualities of adaptation and inheritance that allows for his position. The condition of society could 'not be crystallized into certain unchangeable forms, but will continually modify its aspect, because it will be a living, evolving organism'.¹¹¹ That a consistent part of humanity's biology should stimulate its biological metamorphoses is an ambivalence at the heart of Kropotkin's political ideas. Jesse S. Cohn also recognises this contradiction: 'Kropotkin holds our enduring nature to be our changeability'.¹¹² It meant that, as a species, there was no deterministic pattern to humanity's evolution. Life changed, but followed no inevitable route of progress.

Degeneration

In *Russian Literature: Ideals and Realities* (1905), Kropotkin's interpretation of Fedor Dostoevsky's (1821-1881) 'psycho-pathological'¹¹³ novel *Crime and Punishment* (1866) developed the idea that the environment could inscribe its effects into the biology of the human being. Analysing the murders of the sisters Alyona and Lizaveta, he rejected the notion that 'materialist ideas could in reality bring an honest young man to act as Raskólnikoff did'. 'Raskólnikoffs', he insisted, 'do not become murderers under the influence of such theoretical considerations.'¹¹⁴ Instead, Kropotkin looked for the causes of the murders in the relationship between Raskolnikov's body and the conditions of its existence. Kropotkin implied that Raskolnikov was a victim, a man led to crime by 'some mental affection – a sort of half-lucid lunacy'.¹¹⁵ This 'psychical disease'¹¹⁶ was a resultant that was brought on and exacerbated by 'the lowest imaginable depths of destitution – such as can only be found in a large city like St.

¹¹⁰ Nathan Jun, *Anarchism and Political Modernity* (New York: Continuum International Publishing Group, 2012), p. 146.

¹¹¹ Kropotkin, *Memoirs*, p. 399.

¹¹² Jesse S. Cohn, *Anarchism and the Crisis of Representation: Hermeneutics, Aesthetics, Politics* (Selinsgrove: Susquehanna University Press, 2010), p. 58.

¹¹³ Petr Kropotkin, *Russian Literature: Ideals and Realities*, 2nd edn (London: Duckworth and Co., 1916), p. 179. Originally published as *Russian Literature* (1905).

¹¹⁴ *Ibid.*, p. 183.

¹¹⁵ *Ibid.*, p. 181.

¹¹⁶ *Ibid.*, p. 185.

Petersburg'.¹¹⁷ In Kropotkin's view, Raskolnikov is typical of Dostoevsky's favourite themes: 'the lowest sunken inhabitants of the slums',¹¹⁸ the 'men who have been brought so low by the circumstances of their lives', the 'sufferings, moral and physical, of the downtrodden' – whose desperate poverty has led to a 'broken-down condition of human nature [...] characteristic of neuro-pathological cases'.¹¹⁹ Raskolnikov's condition represented to Kropotkin not only the extreme influence of the environment on the biology of the human being, but the possibility that it could produce in individuals defective and diseased effects. The human organism's propensity to adapt to external conditions did not guarantee evolutionary progress, but could produce lower, degenerate beings.

Seven years later, at the First International Eugenics Congress (1912), Kropotkin stressed his fear about the worrying process of degeneration afflicting the human race. His speech to the conference began by affirming his concern about the reality of humanity's biological descent:

First of all I must express my gratitude to Professor Loria and Professor Kellogg for having widened the discussion about the great question which we all have at heart – the prevention of the deterioration and the improvement of the human race by maintaining in purity the common stock of inheritance of mankind.¹²⁰

Alongside the biological degeneration of human individuals he had seen in Dostoevsky's Raskolnikov, Kropotkin expressed his disconcerting view that humanity as a species exhibited signs of collective deterioration. The causes of biological deterioration, as well as the solutions to its worrying threat, lay in the environment. Kropotkin criticised those at the conference who advocated sterilisation as a solution to degeneration for overlooking the impact of the environment on the future character of the human race. The 'separation of surroundings and inheritance is impossible' he said.¹²¹ Alternatively, by altering the environment in which people lived, by shifting the political parameters of social existence, the biological stock of the human race

¹¹⁷ Ibid., p. 182.

¹¹⁸ Ibid., p. 183.

¹¹⁹ Ibid., p. 180.

¹²⁰ Petr Kropotkin, 'The Sterilization of the Unfit' [1912], in *Anarchy!: An Anthology of Emma Goldman's Mother Earth*, ed. by Peter Glassgold (Berkeley: Counterpoint, 2012), pp. 120-24, p. 121. Originally appeared in *Mother Earth*.

¹²¹ Ibid., p. 122.

would be enhanced. And then, he stated, and not with sterilisation, ‘you will have improved the germ plasm of the next generation’.¹²²

Pick points out that ‘the notion [...] of things getting worse, degenerating culturally, racially universally, punctuates Western philosophy, politics and religion from [...] Plato to Rousseau to Hegel’.¹²³ The language of sickness has provided political thinkers throughout the ages with warnings about the liability of political structures to become unstable and collapse. In chapter three of *The Prince* (1532), for example, Niccolò Machiavelli (1469-1527) looked to the fragility of the human body and its tendency to suffer mortally from disease as a useful image to explain the potential disintegration of the body politic:

For if the first signs of trouble are perceived, it is easy to find a solution; but if one lets trouble develop, the medicine will be too late, because the malady will have become incurable. And what physicians say about consumptive diseases is also true of this matter, namely, that at the beginning of the illness, it is easy to treat but difficult to diagnose but, if it has not been diagnosed and treated at an early stage, as time passes it becomes easy to diagnose but difficult to treat. This also happens in affairs of state; for if one recognises political problems early [...] they may be resolved quickly, but if they are not recognised, and left to develop so that everyone recognises them, there is no longer any remedy.¹²⁴

Like a wasting disease eating away at the life of the body, internal political disorders, if undetected, will consume the body politic from within and cause its destruction. Politics is likened to medicine in so far as it attempts to locate and cure internal threats to existence. The task of the political ruler, therefore, bears resemblance to that of the doctor. Degeneracy has metaphorical qualities for Machiavelli’s political thought. It allows him to highlight the necessity of a ruler’s foresight to political stability. Sickness provides him with a vision of political mortality, a sense of disaster with which to encourage the prince to prepare for storms in calm weather.

In Kropotkin’s bio-political world, however, sickness was not simply a metaphor for political problems, but had become a political disorder in itself. No longer resembling biological life, but a biological reality, the social body could fall ill

¹²² Ibid., p. 123.

¹²³ Pick, *Faces of Degeneration*, p. 18.

¹²⁴ Niccolò Machiavelli, *The Prince* [1532], ed. by Quentin Skinner (Cambridge: Cambridge University Press, 1988), p. 11. On Machiavelli, see Ernest Garver, ‘After Virtù: rhetoric, prudence and moral pluralism in Machiavelli’ *History of Political Thought*, 2, 17 (1996), 195-223; C. J. Nederman, ‘Amazing Grace: Fortune, God, and free will in Machiavelli’s thought’, *Journal of the History of Ideas*, 4, 60 (1999), 617-38.

and suffer from disease. As politics increasingly orientated its powers towards the health of populations, illness shed its metaphorical meaning and took on a literal threat. Kropotkin's thought reflects this development. His literalism and tendency to make metaphor real led not only to the optimistic possibility of improving society's health, but also to the pessimistic realisation of its mortality.

The fearful sense of emergency we find in Kropotkin's speech at the First International Eugenics Congress is reflective of what Pick terms a 'specific later-nineteenth-century language of degeneration'.¹²⁵ This way of talking and thinking about decline differed from earlier uses both quantitatively and qualitatively. The late nineteenth century produced an unprecedented array of inter-referential texts concerned with discussing, dramatising, locating, defining, and solving a problem called degeneracy. The issue crossed political allegiances, scientific disciplines, literary forms and genres. From the novels of Émile Zola (1840-1902) to the science of Huxley to the politics of John Stuart Mill (1806-1873) and Frederick Engels (1820-1895), a fear and fascination of degeneration pervaded the imagination of Western culture.¹²⁶ Moreover, as Richard G. Olson argues, contemporaries fearful of the threat of degeneration tended to see it 'not as a primarily economic or ethical or religious or philosophical problem, but as a problem that had its roots in medical and biological facts'.¹²⁷ Those who wrote about degeneracy claimed an authority for their work that derived from the truth claims of biological science. That things were getting worse ceased to be a matter of opinion and became a scientific claim whose legitimacy, it was believed, could be tested and verified by research, data, and facts. Organs, minds, thoughts, bodies, races, and of course, entire species were all scrutinised in this period as biological entities liable to degenerate.

Owing to his identity as an anarchist, Kropotkin had a complicated relationship with the idea of degeneration. His politics seemed to represent the threat of degeneracy. During his years as a political theorist, anarchism became intimately

¹²⁵ Pick, *Faces of Degeneration*, p. 18. For further studies on degeneration theory in Europe and Russia, see Robert A. Nye, *Crime, Madness, and Politics in Modern France: The Medical Concept of National Decline* (Princeton, New Jersey: Princeton University Press, 1984); Daniel Beer, *Renovating Russia: The Human Sciences and the Fate of Liberal Modernity, 1880-1930*, (Ithaca and London: Cornell University Press, 2008).

¹²⁶ On degeneration theory in Zola's fiction, see Pick, *Faces of Degeneration*, pp. 74-96. On degeneration in political thought, see Stuart C. Gilman, 'Political Theory and Degeneration: From Left to Right, from Up to Down', in *Degeneration: The Dark Side of Progress*, ed. by J. Edward Chamberlin and Sander L. Gilman (New York: Columbia University Press, 1985), pp. 165-98.

¹²⁷ Richard G. Olson, *Science and Scientism in Nineteenth-Century Europe* (Urbana and Chicago: University of Illinois Press, 2008), p. 277.

connected with degeneration, often occupying the passive side of the contemporary lens of analysis. Ideas of degeneracy in a number of scientific and literary forms portrayed anarchism as both cause and symptom of humanity's assumed social and biological decline. With its threat to Europe's political stability seemingly reaching epidemic proportions during the last quarter of the nineteenth century, anarchism became the object of a public discourse that attempted to understand and explain a wave of anarchist terrorism that swept across the continent.¹²⁸

The image of the 'degenerate', popular in criminological and medical discourses of the period, was smoothly superimposed onto the figure of the 'anarchist'. Following the fatal stabbing of French President Carnot by the Italian anarchist Sante Geronimo Caserio (1873-1894) in 1894, for example, criminologist Cesare Lombroso (1835-1909) conducted a scientific study of incarcerated anarchist delinquents.¹²⁹ Claiming the criminality of anarchism to be hereditary, betrayed by physiognomic traits, he located the signs of degeneracy in the anarchist body itself.¹³⁰ In *Degeneration* (1892), dedicated to his 'dear and honored master' Lombroso, Max Nordau (1849-1923) continued to scrutinise the anarchist 'type'. His study biologised anarchism's political dimensions and saw in its confrontation to existing socio-economic and political conditions a sign of worrying organic deficiency:

¹²⁸ Italian anarchists killed the President of France, Marie François Sadi Carnot (1837-1894) in 1894, the Spanish Prime Minister, Antonio Cánovas del Castillo (1828-1897) in 1897, Empress Elizabeth (1837-1898) of Austria in 1898, and King Umberto I (1844-1900) of Italy in 1900. In France, Ravachol (1859-1892) and Émile Henry (1872-1894) brought dynamite to fearful fame in the same decade. The USA also felt the threat of anarchist terrorism, with presidential assassinations in 1881 and 1901 bookending the infamous Haymarket affair of the years 1886 and 1887. For more on this period of anarchist terrorism, see Marie Fleming, 'Propaganda by the deed: Terrorism and anarchist theory in late nineteenth-century Europe', *Terrorism*, 4 (1980), 1-23 (pp. 13-19).

¹²⁹ For the historical context surrounding this episode and its impact upon the work and thought of French crowd psychologist Gustave Le Bon, see Jaap van Ginneken, *Crowds, psychology, and politics 1871-1899* (Cambridge: Cambridge University Press, 1992), pp. 169-74. Lombroso took a keen interest in scientifically studying anarchists. See, for example, Cesare Lombroso, 'Illustrative Studies in Criminal Anthropology: The Physiognomy of the Anarchists', *The Monist*, 3, 1 (1891), 336-43. Lombroso's statistically conducted physiognomic studies showed him that the criminal type 'frequently appears among the [...] Anarchists'. This does not mean, however, that anarchists are 'true criminals', but that 'they possess the degenerate characters common to criminals and the insane'. For more on Lombroso, see Mary Gibson, *Born To Crime: Cesare Lombroso and the Origins of Biological Criminology* (London: Praeger, 2002).

¹³⁰ Lombroso's investigations were part of a broader interest into the causes of anarchist criminality emerging in Europe during the 1880s and 1890s. For a discussion of how criminologists in France sought to attribute anarchist crimes to mental pathology, see Edward J. Erickson, 'Punishing the Mad Bomber: Questions of Moral Responsibility in the Trials of French Anarchist Terrorists, 1886-1897', *French History*, 1, 22 (2008), 51-73. For a look at the relationship constructed between anarchism and atavism in late nineteenth-century Italian criminology as well as more on Lombroso's analytical relationship to anarchism, see Pick, *Faces of Degeneration*, pp. 109-39.

In view of Lombroso's researches, it can scarcely be doubted that the writings and the acts of [...] anarchists are also attributable to degeneracy. The degenerate is incapable of adapting himself to existing circumstances. This incapacity indeed, is an indication of morbid variation in every species, and probably a primary source of their sudden extinction. He therefore rebels against conditions and views of things which he necessarily feels to be painful, chiefly because they impose upon him the duty of self-control, of which he is incapable on account of his organic weakness of will.¹³¹

Understood biologically, the politics of the anarchist became more than a threat to political order: the degenerate's incapacity for physiological adaptation, a particular deficiency of the organism, placed the future evolution of the human species in danger.¹³²

Alongside the image of the anarchist as degenerate, the notion of anarchism as a movement, a set of ideas, or an attitude, was also linked to degeneration. Metaphors of monstrosity, representing anarchism's beastly deviation from the human realm, were commonplace in the anti-anarchist German press of the fin-de-siècle. As Elun Gabriel shows, the hydra emerged as a recurring warning of anarchism's supra-personal, self-replenishing threat to civilised society of which individual acts of terrorism were merely the epiphenomena.¹³³ Sections of the British press also presented anarchism as a source of social and cultural disintegration. In the early 1890s, newspapers represented the European anarchist movement as an 'epidemic disease originating outside Britain', infecting the British social body from the continent.¹³⁴ In 1901, the *Saturday Review* likened anarchism to contagion, spreading across Europe 'as hydrophobia is transmitted from one mad dog to another'.¹³⁵ To many contemporaries, the irrepressible force of anarchism confirmed the contradictory

¹³¹ Max Nordau, *Degeneration* [1892] (New York: Howard Fertig, 1968), p. 22. For more on Nordau, the influence and reception of *Degeneration*, and his ideas of degeneracy in art and literature, see William Greenslade, *Degeneration, culture and the novel, 1880-1940*, (Cambridge: Cambridge University Press, 1994), pp. 120-33.

¹³² While biosocial and psychological analyses were influential in late nineteenth- and early twentieth-century explanations of anarchists and anarchism, there existed other common forms of contemporary investigation. For a concise overview of styles of inquiry that did not invoke ideas of degeneracy, see Ruth Kinna, 'Introduction', in *Early Writings on Terrorism*, ed. by Kinna (Abingdon: Routledge, 2006), pp. xxi-xlii (pp. xxx-xxxii).

¹³³ Elun Gabriel, 'The Anarchist as Monster in Fin-de-Siècle Europe', in *Monsters and the Monstrous: Myths and Metaphors of Enduring Evil*, ed. by Niall Scott (Amsterdam, New York: Rodopi, 2007), pp. 103-20.

¹³⁴ Haia Shpayer-Makov, 'Anarchism in British Public Opinion 1880-1914', *Victorian Studies*, 4, 31 (1988), 487-516 (p. 500). On the ways in which American magazines discursively represented and constructed a beastly, dehumanised anarchism in the last two decades of the nineteenth century, see Nathaniel Hong, 'Constructing the Anarchist Beast in American Periodical Literature, 1880-1903', *Critical Studies in Mass Communication*, 9, 1 (1992), 110-30.

¹³⁵ Quoted in Shpayer-Makov, 'Anarchism in British Public Opinion 1880-1914', p. 503.

nature of the modern era: criminality and immorality were on the rise in the most civilised parts of the world. Anarchism appeared symptomatic of a deadly paradox identified by Huxley: ‘the tendency of the social organism to generate the causes of its own destruction’.¹³⁶

Historians of degeneration are generally united about its pervasiveness, ubiquity, and fluidity in late nineteenth- and early twentieth-century Western political culture. Pick argues that the notion of degeneracy ‘can be found across the political spectrum’.¹³⁷ Stuart C. Gilman traces degeneration’s political promiscuity in texts of political philosophy, arguing that thinkers ‘often assumed degeneracy and tried to argue around it or incorporate in into their theories. In other cases political thinkers would adapt and even transmogrify degeneracy’.¹³⁸ Even nineteenth-century proponents of degeneration seemed to recognise the ubiquity of degeneration’s contemporary appeal. In his dedication to Lombroso, Nordau stated proudly that ‘the notion of degeneracy [has] already shown itself extremely fertile in the most diverse directions’.¹³⁹

Kropotkin provides an interesting case of a thinker attempting to feed the idea of degeneration into a political project. While being an anarchist whose ideas were often subject to the charge of degeneracy, he was nonetheless one of the many contemporary thinkers who assumed it to be a fact. Moreover, as Gilman says of other political thinkers of the period, Kropotkin tried to incorporate degeneration into his political theories. As I will explore in part two, Kropotkin’s inversions and reversals of degeneration theory, a process representative of his playful and creative relationship to scientific ideas, came to form the basis of some of his strongest critiques of the state and capitalism, as well as support his conception of the purpose of revolution.

From very early in his political career a deep pessimism about processes of degeneration permeated his writings. In the spring of 1880, after moving from Geneva to the tranquillity of Clarens on the advice of his doctor, he wrote a number of articles whose quality he later reflected upon in *Memoirs of a Revolutionist* (1899). He remembered that period fondly, writing that in Clarens he ‘produced the best things

¹³⁶ Thomas H. Huxley, ‘Address on behalf of the National Association for the promotion of technical education’ [1887], in *Science and Education*, pp. 427-51 (p. 446).

¹³⁷ Pick, *Faces of Degeneration*, p. 4.

¹³⁸ Gilman, ‘Political Theory and Degeneration: From Left to Right, from Up to Down’, p. 173.

¹³⁹ Max Nordau, ‘Dedication’, in *Degeneration*, pp. vii-ix (p. vii).

that [he] wrote for “Le Révolté”, among them the address “To the Young”.¹⁴⁰ It is telling that Kropotkin should look back with such pride on an article whose tone of anxiety contrasted so sharply with the serenity of his retreat. Indeed, ‘To the Young’ is infused with fears of contamination and death, of biological degeneracy. It is an article that describes ‘a society in decline’.¹⁴¹ Kropotkin’s unease about degeneration was not a passing phase, but persisted in his thought during the coming years. It is important to note that Kropotkin thought about his time in Clarens as a formative experience. He identified the ideas that he had developed there, including the pessimistic vision of social decline, to be foundational to his work in the fin-de-siècle. In *Memoirs of a Revolutionist*, he declared that ‘I worked out [there] the foundation of nearly all that I wrote later on’.¹⁴²

Much of what he wrote later on exhibited his belief that processes of biological decay existed as facts in the world. As we have seen from his speech at the First International Eugenics Congress, this concern could be expressed in terms of social, collective regression. Yet, he also located biological processes of defective deviation in the individual human body. This was a worrying political realisation. Believing the end of politics to be the maintenance and improvement of health, it was imperative that Kropotkin should understand the tendency of organisms to deviate from a healthy state and produce what he called ‘defects of human nature’.¹⁴³ He explored their capacity to undergo regressive modifications in certain social environments. Exhibited in his analysis of Raskolnikov’s criminality, these changes in constitution were often framed in terms of moral degeneracy. Indeed, one of the interesting things about Kropotkin’s discussions of prisons and punishment, a part of his thought that will be examined in chapter four, is his attempt to grapple with immorality as a form of mental illness.

Moral Sciences

Kropotkin required a science of morality if he was to understand the causes of moral sickness. For he was not only interested in the political implications of the desirable features of human morality – the origins of cooperative instincts and the causes of the

¹⁴⁰ Kropotkin, *Memoirs*, p. 424.

¹⁴¹ Kropotkin, ‘To the Young’, p. 44.

¹⁴² Kropotkin, *Memoirs*, p. 424.

¹⁴³ *Ibid.*, p. 466.

spirit of mutual aid – but in undesirable behaviour and immorality. Crime of all sorts – murder, assault, theft, sexual violence – were social problems that his political ideas would need to understand and overcome with the aid of scientific knowledge.

Reflections made in ‘The Ethical Need of the Present Day’ (1904) reveal that Kropotkin believed a science of morality was possible. While he conceded that moral science ‘lags behind’ as a ‘branch of knowledge’,¹⁴⁴ he was sure it would catch up with other scientific advancements:

That such a science is possible lies beyond any reasonable doubt. If the study of Nature has yielded the elements of a philosophy which embraces the life of the Cosmos, the evolution of the living beings, the laws of psychical activity, and the development of society, it must be able to give us the rational origin and the sources of the moral feelings.¹⁴⁵

Kropotkin’s idea about how the moral sciences would replicate the achievements of evolution and physics was straightforward: ‘Even in this domain, the darkest of all’, moral science could shine a light ‘by following the lines of research indicated by physiology’.¹⁴⁶ The view that morality was not yet completely known, but that it could become so scientifically, was a popular theme of the nineteenth century. Mill, for example, lamented the lack of exactness in the study of morality in comparison to ‘the considerable body of truths’ accumulated by biology. In *The Logic of the Moral Sciences* (1843), he described this defective state of moral investigation as ‘a blot on the face of science’.¹⁴⁷ According to Mill, the solution was also simple: ‘*The backward state of the moral sciences can only be remedied by applying to them the methods of physical science, duly extended and generalised*’.¹⁴⁸

Kropotkin’s approach to morality, however, cannot be adequately explained as a manifestation of nineteenth-century scientism’s general assumption that the empirical methods of the natural sciences could be transposed to the social and human realm. As always, when attempting to deal with important political questions, Kropotkin looked to up-to-date and authoritative research in contemporary science and engaged with its specific ideas. In order to find answers to the political question of

¹⁴⁴ Petr Kropotkin, ‘The Ethical Need of the Present Day’, *The Nineteenth Century and After*, 330, 56 (1904), 207-26 (p. 209).

¹⁴⁵ *Ibid.*, p. 210.

¹⁴⁶ *Ibid.*, p. 209.

¹⁴⁷ John Stuart Mill, *The Logic of the Moral Sciences* [1843] (London: Gerald Duckworth and Co., 1988), p. 20.

¹⁴⁸ *Ibid.*, p. 19.

morality, Kropotkin looked to knowledge produced by the emerging discipline of psychology, a discipline he praised for abolishing the dualism between body and mind and showing how mind, intelligence, emotions, and passions ‘may all be reduced to physical and chemical phenomena’.¹⁴⁹ He respected psychology’s scientific authority, heralding what he described as ‘the progress made in the study of human [...] psychology’ in the nineteenth century.¹⁵⁰ By extension, because Kropotkin was particularly interested in questions of immorality and moral sickness, he saw medical psychology, or psychiatry, as an invaluable discipline for moral science.¹⁵¹ In 1887, he expressed his enthusiasm for the medical approach to immorality, thanking Lombroso for ‘having devoted his attention to, and popularized his researches into, the medical aspects of the question’.¹⁵² At the heart of Kropotkin’s thought, then, was a medical understanding of morality that viewed individual and social moral health as the objects of psychiatry.¹⁵³

Such an interpretation relied on an array of knowledge produced by nineteenth-century medical studies of deviance. It was to the professional psychologists, psychiatrists, and criminologists working in this area of research that Kropotkin enthusiastically looked for expert knowledge about moral questions.¹⁵⁴ He cited a number of leading scientists of deviance, including Italian criminologists Lombroso and Enrico Ferri (1856-1929),¹⁵⁵ the renowned mid-century French psychologist

¹⁴⁹ Kropotkin, *Modern Science*, p. 39.

¹⁵⁰ Kropotkin, *Ethics*, p. 1.

¹⁵¹ Psychiatry was particularly important for the ways in which Kropotkin understood morality in a political context. Although my analysis focuses on the interplay of medical psychology and anarchist politics, Kropotkin did look to other nineteenth-century scientific ideas for theories about morality. On Kropotkin’s interpretation of Comtean positivism and Darwin’s evolutionism as moral systems, see Dario Padovan, ‘Social Morals and Ethics of Nature: from Peter Kropotkin to Murray Bookchin’, *Democracy and Nature*, 3, 5 (1999), 485-500 (pp. 485-91).

¹⁵² Petr Kropotkin, *In Russian and French Prisons* [1887] (Montréal and New York: Black Rose Books, 1991), p. 347. Based on the articles ‘Russian Prisons’ (1883), ‘The Fortress Prison of St Petersburg’ (1883), ‘Outcast Russia’ (1883), and ‘Exile in Siberia’ (1884) which first appeared in *The Nineteenth Century*. Other chapters were later added, including one based on a lecture ‘Les prisons. Influence morale des prisons sur les prisonniers’ (1887).

¹⁵³ Kropotkin’s medical approach to morality serves as a particular example of a broader historical shift. Heidi Rimke and Alan Hunt study how the mid-nineteenth century witnessed a significant transition from ‘moral codes deriving their authority from religious doctrine to a distinctive medicalization of the moral rule’. Heidi Rimke and Alan Hunt, ‘From Sinners to Degenerates; the medicalization of morality in the nineteenth century’, *History of the Human Sciences*, 1, 15 (2002), 59-88 (p. 60). The medicalisation of crime and the criminal was an important part of this transition. For an overview of this development, see Richard F. Wetzell, *Inventing the Criminal: A History of German Criminology, 1880-1945* (Chapel Hill and London: The University of North Carolina Press, 2000), pp. 15-28.

¹⁵⁴ The boundaries between such disciplines were often blurred. See Rimke and Hunt, ‘From Sinners to Degenerates; the medicalization of morality in the nineteenth century’, p. 63.

¹⁵⁵ On Ferri’s life and ideas, see Thorsten Sellin, ‘Enrico Ferri’ in *Pioneers in Criminology*, ed. by Hermann Mannheim (London: Stevens and Sons, 1960), pp. 277-99. On Ferri’s criminology and

Prosper Despine (1812-1892),¹⁵⁶ German psychiatrist Wilhelm Griesinger (1817-1868),¹⁵⁷ and Austro-German psychiatrist Richard von Krafft-Ebing (1840-1902).¹⁵⁸ These thinkers provided medical interpretations of immorality and criminality that made sense to Kropotkin's bio-political approach to populations and individual human beings. Their willingness to explore the human body and its relationship to the environment for the causes of moral thoughts and behaviour seemed to him an exciting new development that could have serious political consequences.

British psychiatry also interacted with Kropotkin's understanding of morality. Henry Maudsley (1835-1918)¹⁵⁹ and J. Bruce Thomson (1810-1873)¹⁶⁰ appear as authoritative references in his writings. Both men had been labelling deviants as 'morally insane' and 'degenerate' in a scientific capacity since the 1860s.¹⁶¹ Kropotkin was particularly interested in the way these men understood how the 'moral sense' or 'moral faculty' of human beings becomes impaired and how it could be healed. Again, it was their medical approach that appealed to him the most: the way they linked mental illness and insanity with crime and their consideration of the effects of bodily defects and disease on morals.

Some of the key assumptions of medical psychology helped shape Kropotkin's political understanding of morality. First, moral judgment should no longer rely on notions of sin and evil, but on the medical facts of sickness. Kropotkin was enthusiastic about how Maudsley, in particular, sought to wrestle the domain of

political ideas within his Italian context, see Mary S. Gibson, 'Cesare Lombroso and Italian Criminology: Theory and Politics', in *Criminals and Their Scientists: The History of Criminology in International Perspective*, ed. by Peter Becker and Richard F. Wetzell (New York and Cambridge: Cambridge University Press, 2006), pp. 137-58 (pp. 151-57).

¹⁵⁶ On Despine's criminological ideas see, Jan Verplaetse 'Prosper Despine's Psychologie naturelle and the discovery of the remorseless criminal in nineteenth-century France', *History of Psychiatry*, 13 (2002), 153-75.

¹⁵⁷ On Griesinger and his psychiatric ideas and ambitions, see Otto M. Marx, 'Nineteenth-Century Medical Psychology: Theoretical Problems in the Work of Griesinger, Meynert, and Wernicke', *Isis*, 3, 61 (1970), 355-70 (pp. 355-61).

¹⁵⁸ On Krafft-Ebing's sexology, see Harry Oosterhuis 'Sexual Modernity in the Works of Richard von Krafft-Ebing and Albert Moll', *Medical History*, 2, 56 (2012), 133-55.

¹⁵⁹ On Maudsley's life and ideas, see Peter Scott, 'Henry Maudsley' in *Pioneers in Criminology*, pp. 144-67.

¹⁶⁰ For a brief introduction to Thomson and Maudsley, see Nicole Hahn Rafter, *Creating Born Criminals* (Urbana and Chicago: University of Illinois Press, 1997), pp. 81-82.

¹⁶¹ Garland, 'British Criminology Before 1935', p. 4. The theory of moral insanity was coined by English physician James Cowles Prichard (1786-1848) in 1835. Maudsley was one of its strongest advocates later in the century. Sufferers were believed to be without of the 'moral sense'. Lombroso recognised the potential danger of this condition, suggesting that 'there are cases in which madness is simply a criminal tendency, a lack of any sense of morality. The English call this moral insanity'. Cesare Lombroso, *Criminal Man* [1876], trans. by Mary Gibson and Nicole Hahn Rafter, 1st edn (Durham and London: Duke University Press, 2006), p. 83.

morality from the hands of religious doctrine and claim it for psychiatric medicine. In 1872, Maudsley made this point to the British Medical Association: ‘When we come to deal with examples of moral degeneracy [...] we perceive at once that it is not sufficient to ascribe immorality to the devil; that we must, if we would not leave the matter a mystery, go on to discover the cause of it in the individual.’¹⁶²

Kropotkin supported Maudsley’s stance on this matter. He quoted the psychiatrist at length in *In Russian and French Prisons*, building his idea about the delicate proximity between immorality and madness on Maudsley’s conception of the murky borderland between crime and insanity. Having followed ‘Mr Maudsley’s researches into insanity’ and ‘seriously read his works’,¹⁶³ Kropotkin supported the idea that ‘most of those inmates of our jails who have been imprisoned for attempts against persons are people affected with some disease of the mind’; more often than not, he agreed with the psychiatrists, the criminal is ‘irresponsible for his acts’.¹⁶⁴ Kropotkin also referred to French physician Philippe Pinel (1745-1826) to illustrate this shift from sin to illness. Pinel’s decision to remove the chains from asylum patients, Kropotkin argued, demonstrated to the public that ‘lunatics’ were not ‘possessed by the devil’, but were people ‘whose intelligence was darkened by disease’.¹⁶⁵ No longer was it necessary to summon God or the devil to understand the causes of immorality; what was required was a medical investigation into the individual’s mind. In 1896, Kropotkin identified psychological analysis as the proper means to make this investigation:

The modern psychologist sees in a man a multitude of separate faculties, autonomous tendencies, equal among themselves, performing their functions independently, balancing, opposing one another continually [...]. All are related so closely to one another that they each react on all the others, but they lead their own life without being subordinated to a central organ – the soul.¹⁶⁶

Kropotkin’s thought reveals an understanding of morality that saw significance not in actions, but in conditions or states of the body. People could not be judged from a

¹⁶² Henry Maudsley, ‘An Address on Medical Psychology, Delivered at The Opening of the Psychological Section At the Annual Meeting of the British Medical Association, In Birmingham, August 1872’, *The British Medical Journal*, 606, 2 (1872), 163-67 (p. 165).

¹⁶³ Kropotkin, *Prisons*, p. 347.

¹⁶⁴ *Ibid.*, p. 348.

¹⁶⁵ *Ibid.*, p. 369. Kropotkin may have been referring to Tony Robert-Fleury’s (1837-1912) painting *Pinel à la Salpêtrière* (1876) that depicts this event from 1795.

¹⁶⁶ Kropotkin, ‘Anarchism: Its Philosophy and Ideal’, pp. 119-20.

moral standpoint with reference to their behaviour alone, but by being studied psychologically. He was less interested in what people do, than he was with their bodies and states of mind.

Many of the medical conditions explored by the nineteenth-century psychiatrists that appear in Kropotkin's work were explained within a conceptual opposition between the will and the passions. This distinction was not new to medical psychology, however, but had been part of European political thought in the eighteenth century.¹⁶⁷ A tension between the will, often associated with reason, constraint, the power to 'check' oneself, and the weight of conscience, and an endemic group of inclinations, impulses, appetites, and desires, was important for both Rousseau and Immanuel Kant (1724-1804). It was particularly evident in the way they discussed the political problem of morality. For Rousseau the politically desirable moral quality of virtue could be attained if one listened 'to the voice of one's conscience in the silence of the passions'.¹⁶⁸ An individual's morality – his virtue or moral evil – was a result of an internal conflict between reason and desire. To be virtuous and good, then, 'consists not only in being just, but in being so by triumphing over one's passions, by ruling over one's heart'.¹⁶⁹ This bodily conflict, of course, found expression in the broader opposition between the myopic personal interests of individuals and the enlightened general will of the community. Kant also thought of moral self-determination as a victory of rational man over his irrational nature. To be morally right meant to will one's actions by recourse to reason, and in doing so, overcome the 'self-seeking animal inclinations'.¹⁷⁰

By the time Kropotkin came to work on the subject of morality, however, this set of oppositions had become medicalised within the authoritative language of empirical science. They were still very much in play, but related to a qualitatively different conception of morality. No longer did the conflict between the will and the

¹⁶⁷ The passions were also part of a discourse on madness in the late eighteenth century. See Michel Foucault, *Madness and Civilization: A History of Insanity in the Age of Reason*, trans. by Richard Howard (New York: Vintage Books, 1973), pp. 85-93. Foucault argues that the passions did not seem to simply cause madness, but made it possible.

¹⁶⁸ Jean-Jacques Rousseau, 'Discourse on the Sciences and Arts or First Discourse' [1750], in *The Discourses and other early political writings*, ed. by Victor Gourevitch (Cambridge: Cambridge University Press, 2004), pp. 1-28 (p. 28).

¹⁶⁹ Jean-Jacques Rousseau, 'Letter to M. de Franquières' [1769], in *The Social Contract and other later political writings*, pp. 272-85 (p. 281).

¹⁷⁰ Immanuel Kant, 'Idea for a Universal History with a Cosmopolitan Purpose' [1784], in *Political Writings*, ed. by Hans Reiss, trans. by H. B. Nisbet (Cambridge: Cambridge University Press, 2001), pp. 41-53 (p. 46).

passions result in either virtue or moral evil, as Rousseau imagined they would, but in moral health and moral sickness, in sanity and insanity. The balance, or imbalance, of the will and the passions became a scientific codification of medical conditions. According to Maudsley, one distinctive feature of individuals from the criminal class, that ‘degenerate or morbid variety of mankind’, is that ‘in the presence of temptation they have no self-control’.¹⁷¹ An imbalance between reason and inclination was typical of moral insanity. In such cases, ‘the reason has lost control over the passions and actions, so that the person can neither subdue the former nor abstain from the latter’.¹⁷² The morally insane yield to ‘impulses and desires [...] without check’.¹⁷³ Krafft-Ebing, when examining in *Psychopathia Sexualis* (1886) the state of delusion that commonly accompanies sexually deviant acts such as sadism and exhibition, declared that ‘particular stress should be laid upon the fact that the act emanated from an irresistible impulse’. Additionally, it is ‘of psychical importance [...] that the will power is impaired and quite impotent in the presence of the delusion’.¹⁷⁴

In his codification of morality, Kropotkin’s arrangement of the will and the passions broadly reflects the analysis of the experts to whom he referred for knowledge. He was working on the same opposition as Rousseau and Kant, but in a new scientific, medical territory. He was in tune with the psychiatrists in his belief that a strong will was required for an individual to ‘find the strength to resist the temptations which [...] suddenly arise before him’.¹⁷⁵ Moreover, Kropotkin used this opposition to try and make sense of behaviour he considered to be immoral. As for many psychiatrists in the nineteenth century, the criminal provided an interesting case:

All transgressions against the established principles of morality can be traced to a want of firm Will. Most of the inmates of our prisons are people who have not had firmness enough to resist the temptations that surround them, or to master a passionate impulse that momentarily overpowered them.¹⁷⁶

¹⁷¹ Henry Maudsley, ‘The Borderland’ [1874], in *The Origins of Criminology: A Reader*, ed. by Nicole Rafter (New York: Routledge, 2009), pp. 104-13 (p. 105). This is an extract from Maudsley’s *Responsibility in Mental Disease* (1874). Kropotkin cites this study in a footnote in *In Russian and French Prisons*, p. 348.

¹⁷² *Ibid.*, p. 109.

¹⁷³ *Ibid.*, p. 108.

¹⁷⁴ Richard von Krafft-Ebing, *Psychopathia Sexualis with special reference to the Antipathetic Sexual Instinct: A Medico-Forensic Study* [1886], trans. by F. J. Rebman, 12th edn (New York: Physicians and Surgeon’s Book Company, 1934), p. 549.

¹⁷⁵ Kropotkin, *Prisons*, p. 324.

¹⁷⁶ *Ibid.*, p. 323.

Kropotkin was using psychiatry's conceptual tool kit to make sense of political deviancy. He was making the argument that crime and acts considered to be immoral can be explained in medical terms, as having their causes in mental states and conditions. The causes of crime could be scientifically 'traced' to a mental imbalance. As Kropotkin's words imply, in order to avoid moral transgression the will must be strengthened to control the passions. The will for Kropotkin was thus a medical deterrent to moral sickness.

It must be pointed out that the role of the passions in Kropotkin's thought is multidimensional and far from simplistic. They are not intrinsically dangerous and do not always lead to insanity or crime. Indeed, alongside Kropotkin's depictions of negative passions or base impulses, we find him speaking of 'noble passions [and] great impulses'.¹⁷⁷ This seeming contradiction can be explained by showing two processes that Kropotkin believed led to the passions becoming dangerous to the point at which they can affect moral health. First, as I have described, in the absence of the will, or with a weak will, individuals become engulfed by the appeal of their human instincts and urges. In this case, as Kropotkin's words in the above quotation make clear, the passions can be dangerous. Like Mill, however, Kropotkin thought that with a strong will in place to restrain, control, and direct the influence of the passions and desires, they could lead individuals to noble, creative, and socially useful ends. In chapter three of *On Liberty* (1859), Mill writes that if an individual's 'impulses are strong, and are *under the government of a strong will*, he has an energetic character [my emphasis]'.¹⁷⁸ This is a positive outcome for Mill. Second, as I shall explore further in part two, the environment can be a determining factor in whether the passions are positive or negative features of an individual's psychology. As Kropotkin wrote in *Modern Science and Anarchism*, 'even the passions of men, which under the present structure of society often become a nuisance and a danger [...], can be a source of progress, if their exercise be recognised, and a reasonable social outlet for them be given'.¹⁷⁹ As we shall see in chapter four when I explore the idea of state morality, Kropotkin thought environments could corrupt, that is, sicken and make morbid human impulses: they could be made dangerous by external conditions. Moreover, as I

¹⁷⁷ Petr Kropotkin, 'The Inevitability of Revolution' in *Words of a Rebel*, pp. 29-33 (p. 29). Originally appeared in *Le Révolté* as 'Les Préludes de la révolution' (1882).

¹⁷⁸ John Stuart Mill, *On Liberty and Other Essays* ed. by John Gray (Oxford: Oxford University Press, 1998), pp. 65-67.

¹⁷⁹ Kropotkin, *Modern Science*, p. 58.

consider in chapter five, Kropotkin believed dangerous passions, desires, and temptations were intrinsic to certain social environments and could be learnt, acquired, and inherited by the beings inhabiting them.

Like the moral scientists he read, Kropotkin's discussions of morality have a keen interest in abnormality. Once medicalised, immorality could represent the occurrence of a deviation in the individual from a healthy to a pathological state. Severing morality from the soul and securing it within the body rendered demarcations between 'good' and 'sinful' largely meaningless in the face of a biomedical appreciation of 'moral health' and 'moral sickness'. The 'psychopate' was not sinful or morally bad, but ill.¹⁸⁰ As a form of political deviance, crime was often caused by forms of biological deviation in the individual's body:

The causes of the violence [...] must be sought long years before. And if we push our analysis deeper, we discover that this state of mind is itself a consequence of some physical disease either inherited or developed by an abnormal life; some disease of the heart, the brain, or the digestive system.¹⁸¹

Such a reading of criminality is indicative of the forms of knowledge constituting Kropotkin's broader bio-political worldview that I have outlined in this chapter. He explained the political problem of violence by studying illness in the body of the criminal, and in doing so, medicalises deviant behaviour. As a form of degeneration, moral sickness confirmed to Kropotkin the existence of processes of biological decay lurking in societies and operating on individuals. The victim of this disease, as Kropotkin makes clear in the passage above, has come to their deprived state as an organism capable of biological metamorphosis, either inheriting its deviation or acquiring it through adaptation to an abnormal life.

¹⁸⁰ Kropotkin, *Prisons*, p. 357.

¹⁸¹ *Ibid.*, p. 352.

2 Mapping, Measurement, and Statistics

*I cannot avoid mentioning something about the general situation to you. Living in a great center – in Moscow – it is impossible to know the true condition of the country. To know the truth about current experiences, one must live in the provinces, in close contact with daily life, with its needs and misfortunes, with the starving.*¹⁸²

Petr Kropotkin, 'Letter to Lenin' (1920).

As the Russian Revolution descended into the horrors of civil war, Kropotkin wrote to Vladimir Lenin (1870-1924) from the small village of Dmitrov in a desperate attempt to exert what remained of his declining political influence. At the heart of Kropotkin's critique of the Bolshevik leader was a suspicion of the accuracy of his political sight, his ability to 'see' the state. Lenin's perspective of the objects of his party's politics – the country and the life of the population – was obscured behind the walls of the Kremlin. Kropotkin's political message thus revolved around an epistemological problem: the Bolsheviks' struggle stemmed from their deficient knowledge of reality. Lacking in empiricism, the centralised politics of Bolshevism would remain detached from and ignorant about the society it sought to improve. Access to truth, to what Kropotkin described in the letter as the 'true condition of the country', and the real existence of the people could come only through experience and observation. Contact with life held the key to political success.

Kropotkin's advice to Lenin was the offering of a man whose life extolled the virtues of empirical scientific practice. He had tried to gain knowledge about the world in which he had lived through observation and experiment, supported by evidence and facts. This was common to his age. From Kropotkin's birth in the mid-nineteenth century, knowledge had increasingly come to be seen as objective information about the properties of material reality, and with the rise of statistics in Europe and Russia in the nineteenth century, truth claims about that reality relied further and further on the

¹⁸² Petr Kropotkin, 'Letter to Lenin' [1920], in *Selected Writings*, pp. 335-37 (p. 336). Translated by Martin A. Miller from Vladimir Bonch-Bruевич, 'Moi vospominaniia o Petre Alekseeviche Kropotkine', *Zvezda*, 6 (1930), 186-87.

authority of enumeration.¹⁸³ Striving to acquire knowledge through empirical methods of inquiry, the natural and social sciences looked to numbers to describe, represent, and explain the myriad processes of life.

In *Modern Science and Anarchism*, Kropotkin recognised the great impact made by the development of nineteenth-century numerical empiricism on humanity's understanding of reality. If before, humans peered at the world through the frames of abstract conceptions, now they could explain it through neutral observation and enumeration:

In the same way as the metaphysical conceptions of a Mind of the Universe, a Creative Force of Nature, a Loving Attraction of Matter, an Incarnation of the Idea, an Aim of Nature, a Reason for its Existence, the Unknowable, and so forth were gradually abandoned by the materialist (mechanical, or rather kinetic) philosophy, and the embryos of generalisations found hidden behind these words were translated in the concrete language of facts, so do we endeavor now to proceed when we approach these facts of life in societies.¹⁸⁴

The quantification of life led to a new conception of society in the nineteenth century. The idea of social life came into being, a plane of reality transcending the lives of individuals, whose characteristics could be measured, counted, classified, and correlated. Patterns emerged in the biological traits of mass human behaviour and society began to exhibit regularities that relied on the language of statistics – a ‘concrete language facts’ – for their presentation and comprehension. Kropotkin recognised this development. ‘It is only nowadays’, he boasted of his historical moment, ‘that the conception of society deduced from the observation of social phenomena is rid of its swaddling-cloths.’¹⁸⁵ The nineteenth century had seemingly attained a mature conception of society, an image of social reality made possible by the empirical method.

¹⁸³ For an introduction to the rise of statistics in the nineteenth century, see Ian Hacking, *The Taming of Chance* (Cambridge, New York, and Melbourne: Cambridge University Press, 1990), pp. 1-10.

¹⁸⁴ Kropotkin, *Modern Science*, p. 39.

¹⁸⁵ Kropotkin, ‘Anarchism: Its Philosophy and Ideal’, p. 124.

Learning to Measure

Kropotkin acquired the techniques and enthusiasm for the collection and analysis of information during his schooling at one of Russia's most prestigious military academies: the Corps of Pages. This was when he learned what, how, and why to measure. Like other military institutions of the Russian Empire in the mid-nineteenth century – the Military-Scientific Committee, the General Staff Academy, the Corps of Military Topographers – the Corps of Pages taught young men the skills required for producing the knowledge of physical and social phenomena deemed essential for the political, socio-economic, and military success of the state. The curricula of these army organs were broadly similar, focusing on instruction in the natural sciences, alongside military science (tactics, strategy, fortifications), statistics, geography, cartography, and surveying. Such an education sought to create human beings with a mind for scientific investigation and a faith in systems of knowledge. More specifically, as David Rich shows, it aimed at rearing men of the state who would deal with 'the collection, classification, and discussion of facts bearing on the condition of the state or community'.¹⁸⁶ The Corps of Pages was an integral component of a state crying out for descriptive data about its physical and human resources. If unknown regions were to become governed, if processes of modernisation, urbanisation, and industrialisation were to be effectively managed, and if the causes and character of social problems and political unrest were to be understood and eradicated, then the state had to *see*. The Corps of Pages was but one optical instrument in this political quest for knowledge.

As a formative experience, Kropotkin's education at the Corps of Pages from 1858 to 1862 was an intense training in the epistemological rationale of a modernising empire. He recognised that its agenda was to prepare him for 'a brilliant career in the service of the state'.¹⁸⁷ To that end, it furnished him with an ensemble of disciplinary knowledge and technologies necessary for generating information about the spaces and inhabitants of the empire. Alongside instruction in the natural sciences and 'formidable courses of military science, – tactics, military history [...] artillery and fortification', Kropotkin learned and developed an enthusiasm for statistics as a means to collect and

¹⁸⁶ David Rich, 'Imperialism, Reform and Strategy: Russian Military Statistics, 1840-1880', *The Slavonic and East European Review*, 4, 74 (1996), 621-39 (p. 623).

¹⁸⁷ Kropotkin, *Memoirs*, p. 71.

examine the findings of social scientific investigation.¹⁸⁸ Following a course on ‘comparative statistics’,¹⁸⁹ he eagerly put his new sociological skills into practice and conducted a numerical study of the peasant life of a nearby village market fair. Kropotkin noted this study as a ‘statistical description’ of popular life.¹⁹⁰ It was one of the first times he had experienced the possibility of generating qualitative knowledge about the peoples of the empire through quantification.

Other aspects of his education encouraged Kropotkin to provide form to uncharted and unknown physical reality. In *Memoirs of a Revolutionist*, he remembered the school’s summer camping trips with fondness due to the opportunity the pupils received to try their hand at surveying and cartography:

After a few preliminary exercises we were given a reflecting compass and told, “Go and make a plan of, say, this lake, or those roads, or that park, measuring the angles with the compass and the distances by pacing.” Early in the morning [we] would go out for four or five hours in the parks, miles away, mapping with this compass and paces the beautiful shady roads, the rivulets, and the lakes. [Our] work afterwards was compared with accurate maps, and prizes in optical and drawing instruments [...] were awarded. For me, these surveys were a deep source of enjoyment.¹⁹¹

Mapping the countryside with instruments of measurement was an activity designed to bestow readable coherence to nature. Such an opportunity to impose order on the world gave Kropotkin a thrill. As he recalled in his memoirs, the activity of mapping he experienced in the Corps of Pages ‘left deep traces on [his] mind’.¹⁹² The enthusiasm for creating geometric order stuck.

Following his graduation from the Corps of Pages, Kropotkin rejected a life in St. Petersburg and a possible apprenticeship at the imperial court. His decision was based on a longing for a ‘field of action’ in which he could test his newly acquired knowledge of military science.¹⁹³ In search of unexplored social and physical phenomena, Kropotkin volunteered to serve in a Cossack regiment in the remote provinces of the Russian Empire. From St. Petersburg he thought of these borderlands

¹⁸⁸ Ibid., p. 117.

¹⁸⁹ Ibid.

¹⁹⁰ Ibid., p. 102.

¹⁹¹ Ibid., pp. 123-24.

¹⁹² Ibid., p. 124.

¹⁹³ Ibid., p. 155.

as ‘an immense field for [...] application’ where the undefined and unknown might be given names and made knowable.¹⁹⁴

In taking this decision Kropotkin was following a well-beaten track. Many men graduating from Russian military schools or academies in the mid-nineteenth century saw in the colonies an opportunity to practice the military-scientific training they had been taught by the state and since the 1840s Russian military men had been data-gathering and mapping on the frontiers of the empire.¹⁹⁵ Moreover, as Peter Holquist argues, the Russian experience was characteristic of the practice of European empires more generally, to whom ‘colonies provided a crucial testing ground’ for the application of science to space and populations.¹⁹⁶

During his military service from 1862 to 1867, Kropotkin would learn the indispensable connection between information and politics. Indeed, when he entered into Russia’s military ranks on the frontiers of its empire he took up a position in what Rich describes as a ‘state in overreach’:¹⁹⁷ an empire desperate for standardised knowledge of its vast territories and diverse inhabitants as a basis of its will to govern. During the mid-nineteenth century, with knowledge understood to precede the effective distribution of political power, the Russian government believed that ‘the recording of empire was tantamount to controlling it’.¹⁹⁸ Information about the empire’s frontiers was essential for political power’s claim to authority.¹⁹⁹

Kropotkin collected a lot of information. He set out on data gathering missions. He undertook ethnographical studies of local populations in which he saw ‘at work all the complex forms of social organization which [have been] elaborated far away from the influence of any civilization’.²⁰⁰ He examined economic conditions and sketched ‘the different forms of economic life [of local people] which ought to prevail in different physical regions’.²⁰¹ ‘Each region of the Russian Empire’, he declared when enthusiastically remembering the imperialist rationale of his military service, ‘ought to

¹⁹⁴ Ibid.

¹⁹⁵ See Rich, ‘Imperialism, Reform and Strategy: Russian Military Statistics, 1840-1880’.

¹⁹⁶ Peter Holquist, ‘To Count, to Extract, and to Exterminate: Population Statistics and Population Politics in Late Imperial and Soviet Russia’, in *A State of Nations: Empire and Nation-Making in the Age of Lenin and Stalin* ed. by Ronald Grigor Sunny and Terry Martin (Oxford: Oxford University Press, 2001), pp. 111-44 (p. 111).

¹⁹⁷ Rich, ‘Imperialism, Reform and Strategy: Russian Military Statistics, 1840-1880’, p. 639.

¹⁹⁸ Ibid., p. 638.

¹⁹⁹ For a study of the politics of military science in the Russian Empire, see Alex Marshall, *The Russian General Staff and Asia, 1800-1917* (London and New York: Routledge Taylor and Francis Group, 2006).

²⁰⁰ Kropotkin, *Memoirs*, p. 216.

²⁰¹ Ibid., p. 235.

be treated in the same scientific way'.²⁰² Statistics were invaluable to this scientific enterprise. They provided the form in which local information was collected and analysed by reformers. Kropotkin also had faith in statistics as the technology of knowledge suitable for representing local life. In 1865, when the pace of reform in Chita moved slower than he desired, he put the blame on the local statistical committee for collecting false figures.²⁰³ Kropotkin's frustration surfaced not from suspicion with the method of statistics as such, but from his belief that the committee's information gathering fell behind the required level of exactitude. He was beginning to form the opinion that for politics to be effective, data about its object must be precise.

The practice of mapping was central to this political context. Kropotkin's training in how to make maps in the Corps of Pages was part of a broader drive on behalf of the Russian state towards the mass production of cartographic knowledge. Since the establishment of the Imperial Russian Geographic Society (IRGO) in 1845, to whom Kropotkin would later send geographical reports and findings from his travels in Siberia and Asia, mapping became an activity that was deemed essential for the realisation of the state's political ambitions. Steven Seegel shows that the work of the IRGO in the mid-nineteenth century 'was far from a simple scholarly endeavor', but a process of political information-gathering closely linked to the Ministry of Internal Affairs (MVD).²⁰⁴ The responsibilities of statecraft – territorial expansion, transportation construction, establishing lines of communication, military mobilisation, defence, and above all, governance – were seen to be dependent upon accurate maps for their fulfilment.²⁰⁵

Kropotkin became a collector and producer of this political, cartographic information. In so doing, he helped the state see the far-away spaces it desired to reach. His geographical and cartographical reports supplied St. Petersburg with crucial information about the terrains, climates, weather patterns and other environmental and topographical details with which its modernising projects would have to contend. He

²⁰² Ibid.

²⁰³ Miller, *Kropotkin*, p. 67.

²⁰⁴ Steven Seegel, *Mapping Europe's Borderlands: Russian Cartography in the Age of Empire* (Chicago and London: University of Chicago Press, 2012), p. 111. See chapter five for an analysis of the connection between cartography and imperial politics in mid-nineteenth-century Russia, pp. 110-32.

²⁰⁵ The intimate connection between political power, geographic research, and the map had been made in the Petrine era. Willard Sunderland explores how geography became a recognised science in eighteenth-century Russia and how it was applied as a tool of statecraft. Willard Sunderland, 'Imperial Space: Territorial Thought and Practice in the Eighteenth Century', in *Russian Empire: Space, People, Power, 1700-1930*, ed. by Jane Burbank, Mark von Hagen, and Anatolyi Remnev (Bloomington and Indianapolis: Indiana University Press, 2007), pp. 33-66.

was good at his job. He wanted to render unmapped spaces of the empire readable. The ‘immense region’ of Manchuria, for example, seemed ‘provoking’ to him: the existence of an unknown space appeared to mock his cartographically orientated mind.²⁰⁶ As he stated in ‘Russian Explorations in Manchuria’ (1898), the purpose of exploring this area was ‘to give a full idea of this formerly unexplored region’.²⁰⁷

The value of providing a full idea, or a complete view of formerly unknown regions, existed in describing the canvas of nature on which the plans for extensive transportation and communication networks were to be sketched by the Russian state. Under the auspices of the IRGO, Kropotkin’s geographical work provided St. Petersburg with warnings about how the wildness of nature might impede the construction of these civilisational wonders. In his descriptions of Manchuria, Kropotkin considered the obstacles to communication inherent in the land:

Between the southeastern corner of Transbaikalia (New Tsurukháitu) and Blagovéschensk on the Amúr, the distance west to east is only five hundred miles; but along the Argun and the Amúr it is over a thousand miles, and moreover, communication along the Argun, which is not navigable, is extremely difficult. In its lower parts there is nothing but a mountain track of the wildest description.²⁰⁸

The success of his explorations was measured by the extent to which he had shown that nature could be tamed, and thus, how clearly he had highlighted the possibilities for transportation and communication in far away lands. ‘Our aim, however, was fulfilled’, he told of his trip up the Sungari in Manchuria, ‘we had ascertained that the river is navigable, and an excellent map of it was made’.²⁰⁹

In his discussions of the Trans-Siberian Railway in ‘The Great Siberian Railway’ (1895), Kropotkin’s writing focuses on the difficulties that may obstruct its further construction. Construction had been underway for roughly four years, but difficulties were expected as the line moved east. The article provides numerous graphic descriptions of the natural world through which the tracks of modern civilisation would have to pierce:

²⁰⁶ Kropotkin, *Memoirs*, p. 208.

²⁰⁷ Petr Kropotkin, ‘Russian Explorations in Manchuria’, *The Geographical Journal*, 1, 11 (1898), 63-65 (p. 64).

²⁰⁸ Kropotkin, *Memoirs*, p. 199.

²⁰⁹ *Ibid.*, p. 210.

The third section, between Krasnoyarsk and Irkutsk, will offer more difficulties. First of all, the railway will have to cross the broad and rapid Yenisei, which flows at a level of 410 feet only at Krasnoyarsk, and immediately after that it will have to rise again to a level of over 1000 feet – that is, to the level of the high undulating plains that fringe the great plateau of East Asia. The spurs of the Sayan Highlands reach here to 2029 feet, while the rivers are deeply cut into the wide plains. Of course, such conditions are nothing which would much differ from the usual conditions of railway building in Middle Russia itself, but in East Siberia the laying down of the rails certainly will not progress with the same rapidity as it has hitherto progressed in West Siberia, while the cost of construction will be considerably increased.²¹⁰

Geography served to paint a landscape image that showed in intimate detail the parts of nature that might thwart the threading of the railway. Kropotkin's aim here is to be scientific, yet his concerns are political: how the wildness of nature could put the breaks on civilisational progress.

What excited Kropotkin most of all in this process of political mapping was the production of the simulacrum itself. He took great pleasure in creating simplified models of complex reality. These models would come to provide politics with a view of the terrains under its political jurisdiction. The demanding work of finding generalised form in an array of empirically gained facts was a challenge he relished. This was the moment when science offered its substantial rewards: a completed map corresponding to the world 'out there'. After returning to St. Petersburg in 1867 he began the long process of making sense of data and observations acquired on the empire's frontiers:

Beginning, then, with the beginning, in a purely inductive way, I collected all the barometrical observations of previous travellers, and from them calculated hundreds of altitudes; I marked on a large scale map all geological and physical observations that had been made by different travellers, – the facts, not the hypothesis; and I tried to find out what structural lines would answer best to the observed realities. This preparatory work took me more than two years; and then followed months of intense thought, in order to find out what all the bewildering chaos of scattered observations meant, until one day, all of a sudden, the whole became clear and comprehensible, as if it were illuminated with a flash of light.²¹¹

²¹⁰ Petr Kropotkin, 'The Great Siberian Railway', *The Geographical Journal*, 2, 5 (1895), 146-54 (p. 151).

²¹¹ Kropotkin, *Memoirs*, pp. 225-26.

Kropotkin's joy lay in the activity of making sense of an otherwise chaotic reality. He longed to draw out and expose the hidden meaning lurking in an ensemble of scattered observations.²¹² The map was an invention owing its existence to the measurements, data, descriptions, and facts (not hypotheses!) collected by explorers out in the field of the Russian colonies. Although with the map political power remained distant from the phenomena observed, they now had an *image* onto which it could project its designs:

There are not many joys in human life equal to the joy of the sudden *birth* of a generalization, illuminating the mind after a long period of patient research. What has seemed for years so chaotic, so contradictory, and so problematic takes at once its proper position within an harmonious whole. Out of a wild confusion of facts and from behind the fog of guesses, – contradicted almost as soon as they are born, – a stately *picture* makes its appearance, like an Alpine chain suddenly emerging in all its grandeur from the mists which concealed it the moment before, glittering under the rays of the sun in all its simplicity and variety, in all its mightiness and beauty. And when the generalization is put to a test, by applying to it hundreds of separate facts which had seemed to be hopelessly contradictory the moment before, each of them assumes its due position, increasing the impressiveness of the *picture* [my emphasis].²¹³

These beautiful pictures were the rewards reaped by the Russian state from its educational programs in military science. Alongside other military men wrapped in the culture of knowledge acquisition, Kropotkin was intimately and enthusiastically part of the political impetus to bring unseen reality to life. He was not able to show reality directly to the eyes of politics, but could give birth to new versions of reality, reproductions of the world that were considered more than adequate to direct political decisions. As I will show in part two, Kropotkin's education in the apparatus of the Russian state, a formative experience that began in the Corps of Pages, became crucial for the ways in which he went about constructing the diagnostic and remedial dimensions of his anarchism. Like the political ambitions of the Russian Empire, Kropotkin's political ideas came to rely on statistical information, on measurements of reality, on maps and simulacra.

²¹² Ibid., p. 227.

²¹³ Ibid., p. 226.

Politics by Numbers

Kropotkin's education in the Corps of Pages and his military service on the frontiers of the Russian Empire prepared him for a political career that would play out in a numerical world. He became intellectually active in a political culture that had developed, as Ian Hacking shows, in the aftermath of 'an avalanche of printed numbers'.²¹⁴ During the nineteenth century, nation-states began to count, classify, and tabulate their subjects in ways that were both quantitatively and qualitatively different from earlier forms of political enumeration. Not only did the volume of printed numbers rapidly grow, but *what* was counted began to change. No longer was politics primarily interested in its subjects for taxation and military purposes, but with their bodies, lives, habits, morals, and behaviour.²¹⁵ Owing to his training Kropotkin was well suited to this environment, able to discuss political, social, and economic issues within this new language of knowledge and he was equipped to think politically about a notion of society that by the mid-nineteenth century had become statistical.

The pervasiveness of the technology of statistics in the nineteenth century, alongside the widely held belief that numbers could provide descriptive, qualitative analysis of social phenomena, made Kropotkin's scientific politics possible. His view that 'we know of no region in which it would be impossible for us to find an explanation of the phenomena' relied on scientific thought with statistics as its method.²¹⁶ The forms of knowledge he used to understand human beings – medicine, evolution, theories of degeneration, sciences of moral deviance – often relied on statistics to generate the data required for scientific investigation. This connection of science and statistics in Kropotkin's politics proved a fruitful alliance for nineteenth-century thought in general. Hacking describes the influence of statistics on the human sciences as 'immense',²¹⁷ determining the 'character of social facts'²¹⁸ to be studied and often providing the concepts and data required for the birth of theory itself. Stephan M. Stigler argues that the use of statistics spread across many disciplines of

²¹⁴ Hacking, *The Taming of Chance*, p. 2.

²¹⁵ Silvana Patriarca, *Numbers and Nationhood: Writing Statistics in Nineteenth-Century Italy* (Cambridge, New York, and Melbourne: Cambridge University Press, 1996), p. 1-2.

²¹⁶ Kropotkin, *Modern Science*, p. 16.

²¹⁷ Ian Hacking, 'How should we do the history of statistics?', in *The Foucault Effect: Studies in Governmentality*, ed. by Graham Burchell, Colin Gordon, and Peter Miller (Chicago: The University of Chicago Press, 1991), pp. 181-95 (p. 181).

²¹⁸ *Ibid.*

nineteenth-century scientific thought, ‘from astronomy to geodesy, to psychology, to biology, to the social sciences’.²¹⁹ Statistical enthusiasm was politically promiscuous: the appeal of its apparent power to illuminate the politico-social realm transcended ideological positions, seducing socialists, liberals, and conservatives alike.

The nineteenth-century’s broad statistical faith is evident in Kropotkin’s approach to political and social issues. A lucid example of this can be noticed in his approach to the Russian peasantry. An introduction to this important part of his thought should begin with describing the problem that he thought the peasantry posed – a problem that statistics would seemingly solve. In a discussion of nineteenth-century Russian ‘folk-novelists’ in *Russian Literature: Ideals and Realities*, Kropotkin considered the abolition of serfdom in 1861 and identified the difficulty facing Russian society:

Here was a mass of nearly fifty million people, whose manners and life, whose creed, ways of thinking, and ideals were totally different from those of the educated classes, and who at the same time were as *unknown* to the world as if these millions spoke a quite different language and belonged to a quite different race [my emphasis].²²⁰

The problem Kropotkin identifies is one of ignorance: the emancipation of the serfs had engendered an entire population about which nothing was known. He describes how this predicament rose ‘before every thinking Russian’.²²¹ A barrier stood between educated Russia and the peasantry. The ‘thinking’ Russian’s experience of this social development was one of blindness and detachment.

Kropotkin was looking back to a real problem of the post-emancipation era. As Esther Kingston-Mann discusses, the emancipated serfs caused anxiety for ‘a government in dire need of statistical data’: it simply did not have enough information about the newly constituted subjects it was supposed to govern.²²² As her study also shows, however, emancipation generated concerns among sections of Russia’s educated society with ‘radical’ hopes for social reconstruction. For different reasons,

²¹⁹ Stephan M. Stigler, *The History of Statistics: The Measurement of Uncertainty before 1900* (Cambridge, Massachusetts, and London: The Belknap Press of Harvard University Press, 1986), p. 4.

²²⁰ Kropotkin, *Russian Literature*, p. 249.

²²¹ *Ibid.*

²²² Esther Kingston-Mann, ‘Statistics, Social Science, and Social Justice: The Zemstvo Statisticians of Pre-Revolutionary Russia’, in *Russia in the European Context 1789-1914: A Member of the Family*, ed. by Susan P. McCaffray and Michael Melancon (New York and Basingstoke: Palgrave Macmillan, 2005), pp. 113-39 (p. 120).

therefore, both the government and radical social reformers desired that the peasantry be known. Both believed statistics could solve the problem. Although contrasting in scope and objectives, conservatives and radicals pursued projects to gather and analyse empirically acquired statistical information about the lives of the unknown mass. Thus, statistics became what Kingston-Mann describes as a ‘contested terrain’, accommodating the efforts of disparate political actors.²²³ The autocracy longed for neutral, ‘professional’ data to underpin modernisation and inform policies ensuring social order, while radical students and members of the intelligentsia looked for the damning facts of social inequality, exploitation, and repression that could undermine the government and ignite revolution. All participants, however, pursued this practice with the understanding that it could cure their political myopia.

In the early 1870s the government enacted a policy of far-reaching statistical research into the peasant population, employing numerous local authorities and field researchers. Although fearful of ‘the dangers that might be inherent in the data itself, the data-gatherers, and the data-gathering process’, the Russian authorities’ pressing need for information about the peasantry was too great to ignore.²²⁴ During the decade, however, the largely fiscal concerns of the government were exceeded by the ambitions of the cohort of local statisticians, known as the zemstvo statisticians, many of whom understood their task as a scientific mission designed to lay bare the intimate details of local life. They produced a vast amount of detailed information on the peasantry. The zemstvo statistics were exhaustive: according to Kingston-Mann the zemstvo statisticians ‘produced the largest database on a peasant population before the second half of the twentieth century’.²²⁵

If we turn back to Kropotkin and the problem he raised in *Russian Literature: Ideals and Realities*, we can begin to appreciate his enthusiasm for statistics as an enlightening technology. In his view, the zemstvo statisticians had eradicated Russia’s ignorance about the peasantry. He described it as ‘extensive research’, an ‘ethnographical exploration of Russia on such a scale that nowhere in Europe or America do we find anything similar’.²²⁶ Statistics had shed light on the once dark world of the emancipated serfs, transforming them from an unknown mass into an illuminated population. Kropotkin’s faith in the reliability of the zemstvo statistics was

²²³ Ibid., p. 113.

²²⁴ Ibid., pp. 122-23.

²²⁵ Ibid., p. 113.

²²⁶ Kropotkin, *Russian Literature*, p. 249.

so strong that he based one of his most important anarchist political ideas on the knowledge it had produced of the peasantry. In *Mutual Aid*, zemstvo statistical data is given as the foundation of his knowledge about communal life and his claims to understand its morality:

Moreover, in dealing with the village community in Russia we have the advantage of possessing an immense mass of [statistical] materials, collected during the colossal house-to-house inquest which was lately made by several *zemstvos* (county councils) and which embraces a population of nearly 20,000,000 peasants in different parts of the country.²²⁷

The shift in Kropotkin's presentation of the peasantry is dramatic. On one level this is a transition from unknown to known: of enlightenment. Yet, the significance Kropotkin invests in statistics is not simply about knowing or not knowing. As his words above from *Mutual Aid* reveal, the zemstvo statisticians had given him a political 'advantage'. It added epistemological solidity and accuracy to his political ideas. The numbers, their classifications and tabulations, their *revelations*, had produced a depth and breadth of knowledge capable of supporting a political assertion as bold as mutual aid: a theory about life and humanity in general.

For Kropotkin, the value of the zemstvo statistics lay in the kind of knowledge they produced. The *zemstva* did not simply count taxable units, but generated ethnographic data. This is what Kropotkin means when he says that the material 'embraces' a population. From out of the data could be lifted knowledge about

the common law of different parts and nationalities of the Empire; the religious beliefs and the forms of worship, and still more the social aspirations characteristic of the many sections of the dissenters; the extremely interesting habits and customs which prevail in the different provinces; the economical conditions of the peasants; their domestic trades [and] the thousands of forms taken by the popular co-operative organisations.²²⁸

Kropotkin supported a form of statistics whose aspiration was not merely to count, but to penetrate. As Kropotkin implies, the ethnographic data reached far into social structures and relations: into justice, production, organisation, and exchange; it could reveal the traces left by previous generations in present day habits, customs, and forms

²²⁷ Kropotkin, *Mutual Aid*, p. 214.

²²⁸ Kropotkin, *Russian Literature*, p. 249.

of worship;²²⁹ and it was able to access the thoughts of individuals and the consciousness of communities as expressed in their religious beliefs and social aspirations.

Kropotkin argues that statistics helped solve the post-emancipation-era problem of the unknown peasants. Within this story of enlightenment, however, there is another narrative about social unification. Statistics had broken down the barrier between educated Russia and the peasantry. Ethnographic knowledge had shortened the distance between social groups and allowed for their interaction:

Russian educated society, which formerly hardly knew the peasants otherwise than from the balconies of their country houses, was thus brought in a few years into a close intercourse with all divisions of the toiling masses; and it is easy to understand the influence which this intercourse exercised.²³⁰

Again, Kropotkin arranges a contrast between the situation before and after the zemstvo statistics. In the above contrast, however, their achievement has taken on a new meaning: they not only enlighten, but unify. Here, Kropotkin is hinting at an important belief: as well as being able to overcome geographical distance, epistemological intimacy can overcome distances created in society by wealth and social standing. It is in this way, I believe, that we should understand Kropotkin's critique of Lenin that I used as an epigraph to this chapter. His argument that to know society one must be 'in close contact with daily life' needs to be qualified and shown that it appeals to statistics. Simply living with the peasants could not eliminate the void between the balconies of the educated and the fields of peasant life; one had to go to the people and collect large quantities of data – information that could later be classified, catalogued, and serve as the basis of ethnographical representation. As Kropotkin indicated in a footnote to his prose in *Mutual Aid*: the 'facts concerning the village community' were useful because they had been 'classified and summed up'. As a result, he argued, 'the modern village community question for the first time emerges from the domain of generalities and is put on the solid basis of reliable and sufficiently detailed facts'.²³¹

²²⁹ On the idea that statistics can apprehend a population as a sign and trace of itself, see Joshua Cole, 'The chaos of particular facts: statistics, medicine and the social body in early 19th-century France', *History of the Human Sciences*, 3, 7 (1994), 1-27 (pp. 6-14).

²³⁰ Kropotkin, *Russian Literature*, p. 251.

²³¹ Kropotkin, *Mutual Aid*, p. 214.

The case of the zemstvo statisticians demonstrates that, as a device to penetrate problematic areas of social life, statistics was a pervasive political tool in late Imperial Russian politics and one Kropotkin eagerly employed in his work. But its scope was not limited to revealing the secrets of the peasant commune. As Morrissey writes, ‘this respected and popular scientific method could seemingly illuminate any issue, ranging from birth, marriage, and death to the material conditions of the urban working class’.²³² One issue to which the statistical method was frequently applied in Russia and Europe was deviance. Hacking portrays the ‘statistics of deviance’²³³ as a nineteenth-century fixation, being the striking feature of the avalanche of numbers. What Ferri termed the ‘painful trinity’ of nineteenth-century social diseases – ‘insanity, suicide and crime’ – were forms of bio-political deviance considered knowable through statistical study.²³⁴ Ferri dedicated much attention to the numbers of crime, devoting a large chapter of *Criminal Sociology* (1884) to the facts of criminal statistics. He thought statistics were important to understand crime’s social aspects: ‘The science of criminal statistics is to criminal sociology what histology is to biology, for it exhibits, in the conditions of the individual elements of the collective organism, the factors of crime as a social phenomenon.’²³⁵ Scholars of the nineteenth century have explored the tendency to understand suicide – the second of Ferri’s social diseases – statistically. Morrissey shows how statistics emerged in Russia as a science and state practice that searched for the causes of suicide in the city, the moral condition of the nation, even in civilisation itself.²³⁶ Howard I. Kushner provides analysis of this development in Europe and America, exploring the contemporary belief that statistics showed suicide to be an illness intrinsic to modernity.²³⁷ Insanity, the third disease of Ferri’s painful trinity, was also analysed numerically as a social disease. In Book 2 of *Mental Pathology and Therapeutics* (1845), entitled ‘The Cause and Mode of Origin of Mental Disease’, for example, Griesinger presented statistics as a technology

²³² Morrissey, *Suicide*, pp. 177-78.

²³³ Ian Hacking, ‘Making Up People’, in *Reconstructing Individualism: Autonomy, Individuality, and the Self in Western Thought*, ed. by Thomas C. Heller, Morton Sosna, and David E. Wellbery (California: Stanford University Press, 1986), pp. 222-36 (p. 222).

²³⁴ Enrico Ferri, *The Positive School of Criminology* [1901], trans. by Ernest Untermann (Chicago: Charles H. Kerr and Company, 1913), p. 8.

²³⁵ Enrico Ferri, ‘The Data of Criminal Statistics’, in *The Origins of Criminology*, pp. 295-99 (p. 296). This is an extract from Ferri’s *Criminal Sociology* (1884).

²³⁶ Susan K. Morrissey, ‘Mapping Civilization: The Cultural Geography of Suicide Statistics in Russia’, *Journal of Social History*, 3, 46 (2013), 651-67.

²³⁷ Howard I. Kushner, ‘Suicide, Gender, and the Fear of Modernity in Nineteenth-Century Medical and Social Thought’, *Journal of Social History*, 3, 26 (1993), 461-90.

indispensable to social medicine: ‘The study of the predisposing causes of mental diseases embraces [...] the consideration of *those more distant relations which influence whole communities*, and can only be shown by statistics, their mode of action on individuals being quite uninvestigable’.²³⁸ Statistics was an important part of the nineteenth-century’s medical response to its perceived array of social sickness.

Kropotkin also took part in the mapping of deviance, commonly using statistics to illuminate what he took to be social diseases. A good example of this approach is found in *The Terror in Russia: An Appeal to the British Nation* (1909). While Kropotkin is concerned with suicide in this book, presenting lists showing ‘an epidemic of suicides in the prisons of Russia’, his main focus is on crime.²³⁹ In a chapter on ‘executions’, Kropotkin relied on official statistics to represent the regularity of murders committed in the Russian state from year to year. By creating his own tabulated representation of murders and executions in European Russia and comparing it with government figures, he aimed to prove that crime rates had not risen since the 1905 Revolution:

In order to get any correct idea, these [government] figures must be compared with the numbers of murders and persons wounded in ordinary times; and when this is done, it appears that in the numbers that are mentioned in the above [government] figures *there is absolutely no extraordinary increase which might in any way excuse the suspension of ordinary justice, and the surrender of Russia to the laws that prevail in times of war and to the summary justice of Military Courts.*²⁴⁰

The conclusions he reached were political. By enumerating social deviance Kropotkin was able to construct a political argument denouncing ‘extraordinary’ government measures against crime by pointing out the ‘ordinariness’ of crime rates. Using figures from 1874 to 1908, he describes a pattern of regularity in the murder rates of the Russian state. After 1905, he argued, there was no change to a regular number of murders committed from one year to the next. The numbers told no ‘extraordinary’ story about increased social unrest that might warrant the suspension of ‘ordinary’

²³⁸ Wilhelm Griesinger, *Mental Pathology and Therapeutics* [1845], trans. by C. Lockhart Robertson and James Rutherford, 2nd edn (London: The New Sydenham Society, 1867), p. 133.

²³⁹ Petr Kropotkin, *The Terror in Russia: An Appeal to the British Nation* (London: Methuen & Co., 1909), p. 29.

²⁴⁰ *Ibid.*, p. 36.

justice. According to Kropotkin, the statistical facts reveal no deviation from the regular, annual patterns of political deviance.

Kropotkin used statistics as method that could allow him to make claims about the activity of society. In order to make his claim authoritative, his enumerations of society had a distinctly public tone. His work professed to be transparent: the sources of information supporting his arguments were laid bare in footnotes and citations. In *The Terror in Russia* he cites the Russian newspapers and journals in which he found, counted, and tabulated incidents of deviance. *Ryech* (The Speech), *Sovremennoye Slovo* (The Modern Word), *Novoye Vremya* (The New Times), and *The Warsaw Echo* are but some of the public sources of information from which Kropotkin's claim to depict the field of social reality derived its authority. In this claim to objectivity, the statistical element in Kropotkin's thought was typical of the public nature of statistics emerging in the nineteenth century. As Silvana Patriarca argues in her discussion of nineteenth-century statistics in Italy, 'the appropriation by the "public" of this language of power is perhaps the most distinctive trait of statistics in the nineteenth century'.²⁴¹ Kropotkin's was one of the many nineteenth-century public voices able to appropriate the language of statistical fact in support of political argument.

Visualising Society

Kropotkin used numbers to uncover and make visible certain patterns and phenomena that he believed to be 'real', but invisible to the naked eye. This was important for a thinker who wanted to make political arguments about problems and processes that were 'social' and transcended individuals. Patriarca explains this particular lure of statistics as a claim to offer politics an instrument of "'scientific" observation'.²⁴² With this visual aid, politics could bring society into view.

Kropotkin's ideas about society relied on the visual possibilities opened up by statistics. Often he outlined society's 'economic activity' (a plane of reality entirely based on numbers for its conception) statistically before making political arguments. In chapter seventeen of *The Conquest of Bread*, he apologised for the absence of hard evidence in support of his views about the importance of agricultural production. To

²⁴¹ Patriarca, *Numbers and Nationhood*, p. 17.

²⁴² *Ibid.*, p. 7.

compensate, however, he pointed his readers to where they could find the necessary data: ‘It would be impossible to quote here *the mass of facts on which we base our political assertions*. We are therefore obliged to refer our readers who want further information to another book, *Fields, Factories, and Workshops* [my emphasis]’.²⁴³ Turning to this book in search of the facts, the reader finds an array of statistical information. Figures, equations, calculations, and tables in the appendix are designed to make visible and illustrate qualitative ideas such as progress, power, growth, and value. The extent to which Kropotkin saw in statistical data a trustworthy image of reality is also shown in the prefaces to the first and second editions of *Fields, Factories and Workshops* (1899). The preface to the first, written in 1898, declares that arguments contained in some parts of the book ‘have been confirmed during the last ten years by such a mass of evidence that a very considerable amount of new matter had to be introduced, while the chapter on agriculture and the small trades had to be written anew’.²⁴⁴ In 1912, Kropotkin wrote the preface to the second edition, by which time he once more had at his disposal ‘an immense mass of new [statistical] materials’.²⁴⁵ This information, he argued, verified the economic forecasts he had made fourteen years earlier. Kropotkin’s political ideas needed to catch-up with newly emerging images of reality presented by rapidly accumulating statistical evidence. New sets of numbers illustrated new realities to which his politics had to correspond.

Nowhere was Kropotkin more enthusiastic about counting society than in his response to the 1897 imperial census of the Russian Empire. Taking his lead from the director of the Russian state’s Central Statistical Committee, Petr Semenov (1827-1914), Kropotkin wrote ‘The Population of Russia’ (1897) in which he discussed the significance of the census.²⁴⁶ He was incredibly enthusiastic about the census, describing how it had collected and classified, by the work of ‘an army of 15,000

²⁴³ Kropotkin, *The Conquest of Bread*, p. 182. This remark was made in the revised 1913 version of the English translation, allowing Kropotkin to refer his readers to a work published in 1899.

²⁴⁴ Petr Kropotkin, ‘Preface’ [1898], in *Fields, Factories and Workshops* [1899] (London: Swan Sonnenschein and Co., 1901), pp. iii-vi (p. vi). Originated as a series of articles published in *The Nineteenth Century* between 1888 and 1890.

²⁴⁵ Petr Kropotkin, ‘Author’s Preface to the Second Edition’ [1912], in *Fields, Factories and Workshops Tomorrow*, ed. by Colin Ward (London: George Allen and Unwin, 1974), pp. 19-21 (p. 19).

²⁴⁶ Semenov’s five-volume *Geographical-Statistical Dictionary of the Russian Empire* (1863-85) had a great influence on ambitions to map the empire’s territory and people. On Semenov and his role in mapping the Russian Empire through the IRGO, see Seegel, *Mapping Europe’s Borderlands*, pp. 114-16.

enumerators’,²⁴⁷ the ‘most valuable data’²⁴⁸ necessary for visualising society. He shared the view of Semenov and the Central Statistical Committee that, compared with earlier fiscal-minded censuses measuring individuals for purposes of taxation, a statistical-ethnographic study was a scientific undertaking indispensable to politics. ‘The earlier censuses of Russia were not censuses at all’, he wrote. ‘They were mere enumerations of the “tax-paying” peasant and small artisan population, which enumerations – as P. P. Semenov remarked in his report – “supplied almost no data for science, were of little value for the administration, and were hateful to the population”’.²⁴⁹

That Kropotkin saw eye-to-eye with the Central Statistical Committee about the aspirations of social measuring is striking. In 1897, Kropotkin was a committed anarchist whose writing commonly denounced the state and its relation to its subjects. Yet, we find him here in full support of a government body founded by the MVD and in agreement with the state about how politics should relate epistemologically to its subjects. This tension, I believe, can only be explained by the fact that, for Kropotkin, statistics was the only means by which to know, think, and write about the social realm. He did not accept the political authority of the state, but supported its use of statistics as a technology for the production of knowledge.

The census seemed to promise Kropotkin a new and exciting development in social mapping. Just as a cartographical map of the empire’s borderlands could give birth to an immense picture of inanimate reality, holding in its simplicity ‘the key to the structure of the mountains’,²⁵⁰ the information provided by the census, he thought, could bring about a new and simplified way for politics to cast its eyes over the human beings inhabiting a territory. Indeed, the census was a map of human terrain. It simplified reality into a condensed and easily comprehensible form. That the census was a mere representation of a complicated world was not a default, but one of its virtues. Society could only become visible through such a simplification, could only be ‘read’ by the imposition of legibility into reality. The reductive nature of the census, its

²⁴⁷ Petr Kropotkin, ‘The Population of Russia’ *The Geographical Journal*, 2, 10 (1897), 196-202 (p. 198).

²⁴⁸ *Ibid.*, p. 196.

²⁴⁹ *Ibid.*, p. 198.

²⁵⁰ Kropotkin, *Memoirs*, p. 215.

inescapable tendency to generalise, was not a flaw, but the desirable effect of a technique designed to create numerical signs of society on paper.²⁵¹

The statistical art of giving numerical form to reality, a political act that was inherent in the 1897 census (or in any census for that matter), had creative qualities that are important if we are to understand Kropotkin's thought and his basic conception of society. Kropotkin believed that the census shed light on reality as it existed independently of the methods used to represent it. Yet, the census did not simply reflect, it produced. It gave birth to new ways of thinking, to new objects for scientific study and new fields for political intervention. One idea that came into being from this project of large-scale counting was that Russia's disparate inhabitants constituted a 'population'. Kropotkin's tabulation of Russia's inhabitants, ordered within various categories relating to particular regions, had the effect of transposing individuals and groups into elements, whose meaning resided in their relation to the whole. As Holquist shows, the holistic reading of human existence was a common product of statistical counting during this period, whereby the classification of the Russian Empire's inhabitants 'transformed them from hitherto amorphous "people" into a well-defined "population"'.²⁵² Statisticians catalogued individuals according to ethnic categories and, once arranged into readable tables and lists, 'established a grid of ethnicity for the Russian Empire'.²⁵³ Moreover, not only were undefined peoples converted into definite populations visible to political power, but having been lifted from the data, populations came to be seen as being comprised of discrete (ethnic) elements.

Kropotkin recognised the creative power of social mapping. He stated that the census could bring into existence a view of the empire's social terrain that had never been seen before. The tabulated data from the 1897 census, he promised, 'will evidently make it possible [...] to compile at last a reliable ethnographic map of the Russian Empire'.²⁵⁴ Although Kropotkin considered the ethnographic mapping of Russia's territory to be a revealing practice, he acknowledges that this would be a new view, a possibility that had been produced. In this way, statistics generated what

²⁵¹ For a similar idea about statistics in general, see Cole, 'The chaos of particular facts: statistics, medicine and the social body in early 19th-century France', p. 3.

²⁵² Holquist, 'To Count, to Extract, and to Exterminate: Population Statistics and Population Politics in Late Imperial and Soviet Russia', p. 113.

²⁵³ *Ibid.*, p. 114.

²⁵⁴ Kropotkin, 'The Population of Russia', p. 198.

Patriarca calls ““reality effects”” at the centre of his worldview.²⁵⁵ As a method in his political discourse it had important ‘cognitive implications’, making it possible for him to think of human existence in terms of populations and their constituent parts.²⁵⁶

Laws of Chance

Part of the desire to visualise society in the numbers of statistical data stemmed from a belief that they could uncover the underlying laws that governed it. Just as the natural sciences, equipped with material gained from observation and experiment, sought to lay bare the laws governing physical reality, the social sciences too, with statistics providing and arranging data about social phenomena, pursued in their numbers the laws governing social life. Numerical information about mass social existence, therefore, seemed to reflect truths about a social whole that transcended the individuals by whom it was constituted. As Theodore M. Porter points out, nineteenth-century statisticians ‘persuaded their contemporaries that systems consisting of numerous autonomous individuals can be studied at a higher level than that of the diverse atomic constituents’.²⁵⁷ ‘Using statistics’, Porter continues, ‘it seemed possible to uncover general truths about mass phenomena even though the causes of each individual action were unknown and might be wholly inaccessible.’²⁵⁸ Statistics claimed to look down on an already constituted social field that was supra-individual and governed by social laws.

Leading statisticians in the nineteenth century had popularised the idea that the enumeration of human populations could reveal hidden social laws. The Belgian astronomer Lambert Adolphe Jacques Quetelet (1796-1874) was one of the most influential voices making this optimistic claim. That Kropotkin cites him as an authority in the field of social measurement makes his ideas important for this study. During the middle third of the nineteenth century, Quetelet’s work, as well as his organisation of international statistical congresses, was instrumental in propagating the view that ‘social physics’ could repeat the successes of ‘natural physics’: statistics

²⁵⁵ Patriarca, *Numbers and Nationhood*, p. 4.

²⁵⁶ Ibid.

²⁵⁷ Thomas M. Porter, *The Rise of Statistical Thinking, 1820-1900* (Princeton: Princeton University Press, 1986), p. 5.

²⁵⁸ Ibid., p. 7.

could explain social reality in terms of invisible laws and the pressure they exert on individuals. As Quetelet implied in ‘Notice on Periodical Phenomena’ (1842), with statistical research it was thought possible to ‘determine the laws by which [social phenomena] are governed’. It was a practice directed towards the ‘discovery of the general connection which exists among all periodical phenomena’.²⁵⁹ The view that social laws existed independently of the methods used to study them, and that they revealed themselves in numbers, were core assumptions of Quetelet’s worldview.

Quetelet’s quest for a science of society had as its leading goal the illumination of the laws of deviance.²⁶⁰ He was particularly interested in counting crime, beginning his research in the immediate years following the French government’s publication of official crime statistics in 1827. This kind of information made his work possible. Quetelet wanted to explain what he found to be regularities in the number of recorded crimes that were committed from year to year. Statistics, he believed, could locate the factors, like age and sex, which largely determined the likelihood of an individual committing crime.²⁶¹ They could also make visible the forces outside the individual, the forces of the social milieu to which people seemed inextricably bound and whose laws appeared to operate on their lives. Quetelet’s influence on nineteenth-century social thought was considerable. Statistically minded criminologists, including Ferri, to whose statistical work I referred earlier in this chapter, would embrace the task set by Quetelet, finding in the labyrinths of criminal statistics not only the causal laws of crime, but the clues about how to prevent it.

Kropotkin, like Quetelet, thought the findings of statistical research gave exclusive access to the causal laws of social deviance. In ‘Law and Authority’ (1882), he claimed that statistics could reveal the patterns of crime and explain its appearance in society:

Statisticians and legists know that when the severity of the penal code is lessened there is never an increase in the number of attempts against the lives of citizens. On the other hand, when the crops are abundant, when bread is cheap and the weather is good, the number of murders decreases at once. It is

²⁵⁹ Adolphe Quetelet, ‘Notice on Periodical Phenomena’, *Journal of the Statistical Society of London*, 2, 5 (1842), 208-09 (p. 208).

²⁶⁰ See Piers Beirne, ‘Adolphe Quetelet and the Origins of Positivist Criminology’, *The American Journal of Sociology*, 5, 92 (1987), 1140-69.

²⁶¹ Wetzell, *Inventing the Criminal*, pp. 21-23.

proved by statistics that the number of crimes increases and declines in relation to the price of necessities and to good or bad weather.²⁶²

In Kropotkin's mind, statistics undoubtedly showed the correlation between the occurrences of crime, the price of goods, and the weather. He set the political problem of crime within a causal dynamic, whereby it appears subject to certain laws depicting the relationship between social behaviour and the environment.

In *In Russian and French Prisons*, Kropotkin continued to praise statistics for their ability to reveal the laws of crime. When his discussions about the social causes of crime and the 'predictability' of annual crime rates are viewed in relation to Quetelet's, the shared statistical interest of both thinkers becomes clear. In 1869, Quetelet boasted about the level of exactitude reached by the statistical enumeration of crime, implying that the social laws revealed by the figures can be used to predict future events:

We are able to enumerate in advance how many individuals will stain their hands with the blood of their fellow creatures, how many will be forgers, how many poisoners, pretty nearly as one can enumerate in advance the births and deaths which must take place.²⁶³

In a remarkably similar passage, Kropotkin claimed that future crime rates could be predicted using existing statistical data:

We can predict with great approximation the number of murders that will be committed next year in each country of Europe. And if we should take into account the disturbing influences which will increase, or diminish, the number of murders committed, we might predict the figures with a still greater accuracy.²⁶⁴

The confidence both men show in statistics' ability to predict future crime rates is a consequence of their belief that statistical research reveals the laws governing social behaviour: such laws make that behaviour regular and repeatable.

That Kropotkin uses the phrase 'predict with great approximation', falling short of claiming access to the definite, determined truth of future events, depicts the

²⁶² Petr Kropotkin, 'Law and Authority', in *Words of a Rebel*, pp. 145-64 (p. 162). Originally appeared in *Le Révolté* as 'La Loi et l'Autorité' (1882).

²⁶³ Quetelet, 'Research on the Propensity of Crime at Different Ages' [1831], quoted in Beirne, 'Quetelet and the Origins of Positivist Criminology', p. 1153.

²⁶⁴ Kropotkin, *Prisons*, p. 341.

character of the social laws that he, Quetelet, and others believed statistical research was uncovering. The laws that appeared to leap out of nineteenth-century statistics were not the universal laws of nature described in eighteenth-century European Enlightenment thought, determining a world of preconceived aims and hidden plans, but laws of probability. As Hacking describes, ‘during the nineteenth century it became possible to see that the world might be regular and yet not subject to universal laws of nature. A space was cleared for chance.’²⁶⁵ The laws of chance were the sum effect of measurable variables existing in any given environment that exerted an influence on social life. Far from showing the unchangeable laws to which social life must always submit, the laws of probability claimed to make accurate predictions of its activity, events, and behaviour that were most likely to occur under certain prevailing conditions.

Compared to nineteenth-century laws of probability, the eighteenth-century notion of deterministic natural law allows no room for the operation of chance. In ‘Idea for a Universal History with a Cosmopolitan Purpose’ (1784), Kant argued that individuals are ‘unwittingly guided in their advance along a course intended by nature’.²⁶⁶ His idea of natural law was equal to a ‘definite plan of nature’. When Kant imagines historical development severed from the explanatory construct of natural law, he foresees a chaotic, worrying situation: ‘If we abandon this basic principle, we are faced not with a law-governed nature, but with an aimless, random process, and the *dismal reign of chance* replaces the guiding principles of our reason [my emphasis]’.²⁶⁷ Kant’s theory of natural law is typical of the Age of Reason, where, as Hacking says, ‘chance had been the superstition of the vulgar’.²⁶⁸

By Kropotkin’s late nineteenth-century context, the notion of causation in social law relied on the ideas of probability and chance that were made visible by population statistics. In ‘Anarchism: Its Philosophy and Ideal’, Kropotkin was clear about this new understanding of natural and social law, framing probability against the idea of determinism characteristic of Kant and the Enlightenment Age of Reason:

As to the harmony that the human mind discovers in nature, and which harmony is on the whole but the verification of a certain stability of

²⁶⁵ Hacking, *The Taming of Chance*, p. 1.

²⁶⁶ Kant, ‘Idea for a Universal History with a Cosmopolitan Purpose’, p. 41.

²⁶⁷ *Ibid.*, p. 42.

²⁶⁸ Hacking, *The Taming of Chance*, p. 1.

phenomena, the modern man of science no doubt recognizes it more than ever. But he no longer tries to explain it by the action of laws conceived according to a certain plan pre-established [...]. What used to be called “natural law” is nothing but a certain relation among phenomena which we dimly see, and each “law” takes a temporary character of causality; that is to say: *If* such a phenomenon is produced under such conditions, such another phenomenon will follow.²⁶⁹

In contrast to Kant, Kropotkin allowed for ‘nothing preconceived in what we call harmony in Nature’. Harmony, regularity, and repeatability in social activity were merely forms of ‘momentary equilibrium’, the result of a particular arrangement of conditions.²⁷⁰ In *Modern Science and Anarchism*, Kropotkin reiterated that natural laws were not fixed forever, but conditional: ‘every natural law always means this: – “*If* such and such conditions are at work, the result will be this and that [...].” Always, there is an *if* – a condition to be fulfilled’.²⁷¹ Kropotkin’s thought is a philosophical space where determinism has given way to chance.

An area of Kropotkin’s thought where we can notice the laws of chance having full reign is that of his biological evolutionism. Hacking argues that evolutionary theorising from the mid-nineteenth century ‘was to import chance into biology’.²⁷² Kropotkin recognises the significance of this historical development. In ‘The Theory of Evolution and Mutual Aid’ (1910), he acknowledges Quetelet for making this import and bringing statistical thinking to the biological sciences: ‘Quetelet’, he pointed out, ‘had extended these laws [of probability] to facts of organic life; now we see that they fully apply to variation’.²⁷³ With nineteenth-century statistics and Darwinian biology, the fearful image of a chaotic, accidental, and random world outlined by Kant in the eighteenth century, where the ‘dismal reign of chance’ threatened the basis of rational knowledge, became a reality for Kropotkin which was inherent in the most fundamental conception of life itself. Evolution was a ‘multitude of variations which appear in every generation of plants and animals without any pre-conceived plan, as a consequence of the multitude of forces acting in all directions’.²⁷⁴

²⁶⁹ Kropotkin, ‘Anarchism: Its Philosophy and Ideal’, p. 120.

²⁷⁰ Ibid.

²⁷¹ Kropotkin, *Modern Science*, p. 77.

²⁷² Hacking, *The Taming of Chance*, p. 8.

²⁷³ Petr Kropotkin, ‘The Theory of Evolution and Mutual Aid’ [1910], in *Evolution and Environment*, pp. 159-83 (p. 137). Originally appeared in *The Nineteenth Century*.

²⁷⁴ Ibid., p. 135.

For Kropotkin, evolution was a typical example of conditional causes and effects, a life process governed by the laws of chance.

It is important to understand this meaning of ‘law’ in Kropotkin’s thought. Often scholars rightly point out Kropotkin’s belief and interest in laws, but rarely examine their character, how they could be seen, how they are caused, and how they operate on human beings. Crowder, for example, writes that as a classical anarchist, Kropotkin ‘assume[s] the existence of an objective moral law of nature’ without explaining how Kropotkin thought this law worked.²⁷⁵ If we are to properly appreciate Kropotkin’s ideas about social change and revolutionary transformation (ideas that I will explore in part two), the conditional, environmental, and potentially alterable nature of social, moral, and natural law in his thought needs to be recognised as something distinct from an Enlightenment conception of law that Crowder identifies as a central influence on classical anarchism. Of course, as I have shown, Kropotkin’s political ideas did not look upon a social world that was fixed by deterministic, Kantian laws of nature. The only task remaining for politics in the face of such laws is to gain knowledge of them and conform. But because Kropotkin saw human existence as subject to conditional laws, an ensemble of causes and effects that were literally dependent on socio-economic, political, and environmental conditions, politics could not only hope to know social laws, but to alter them by through the revolutionary rearrangement of the conditions of life. Owing to the fact that the social laws of crime, suicide, insanity, death, birth, and a whole range of social phenomena were identified by statistics to be the sum effect of conditional factors, their character, and thus their effects, could be changed by political revolution. This possibility for intervention is explored in the following chapter, where Kropotkin’s desire to interfere with nature is treated as a political ambition.

²⁷⁵ George Crowder, ‘Classical Anarchism: A Reply to Kinna’, *Anarchist Studies*, 2, 1 (1993), 147-53 (p. 149).

3 Transforming the Social

*If you apply to the study of the social question the severe inductive standards of the naturalist, you will end up in our ranks.*²⁷⁶

Kropotkin, 'To the Young'.

As the epigraph to this chapter indicates, as an object for politics, Kropotkin thought society constituted a distinct, singular entity that should be treated from the standpoint of natural science. He perceived the existence of a social body, an organism with visible and measurable qualities. Society existed in tables of catalogued and categorised data, in charts, graphs, and maps. He literally saw its characteristics: its ages, occupations, births, deaths, productive output, crime rates, health, sicknesses, progress, and decline. Kropotkin required evidence to believe in the existence of society.

Kropotkin could conceive of society as 'people in the aggregate'.²⁷⁷ In so far as the individual was bound to society, it remained so not through bonds of political law, but by regulatory and self-governing social laws. The individual became a particular expression of the character of the social realm, its actions corroborating or defying social law, its hardships and tribulations part of broader social problems, its life an indicator of the broader quality of social health. Within this context, descriptions of society's character did not come to Kropotkin from the depths of political philosophy, but were accessible to him in the shape of scientific reports, in ethnographical and anthropological research, in sociology, criminology, and psychology. Society became an artefact subject to the gaze of scientific knowledge: it could be analysed, understood, and explained. Kropotkin's idea of society, then, was a reified entity made knowable by science and social counting. Owing to the fact that he 'recognises no method of research [for politics] but the scientific', the only way for Kropotkin to acquire knowledge of this entity was by studying it scientifically.²⁷⁸ As he wrote in

²⁷⁶ Kropotkin, 'To the Young', p. 46.

²⁷⁷ Petr Kropotkin, 'The Permanence of Society after the Revolution' [1890], in *Act For Yourselves: Articles from Freedom 1886-1907*, ed. by Nicolas Walter and Heiner Becker (London: Freedom Press, 1988), pp. 87-91 (p. 89). Originally appeared in *Freedom*.

²⁷⁸ Kropotkin, *Modern Science*, p. 91.

‘Anarchism: Its Philosophy and Ideal’, ‘our first task is to find out by an analysis of society its characteristic tendencies’.²⁷⁹ For Kropotkin, the notion of society came into being as a result of the production of scientific knowledge about a biological entity.

Taming Nature

In a chapter of *Fields, Factories and Workshops*, entitled ‘The Possibilities of Agriculture’, Kropotkin described a new relationship of science to plants:

New horizons are continually unveiled. For the last fifty years science – especially chemistry – and mechanical skill have been widening and extending the industrial powers of man upon organic and inorganic dead matter. Prodiges have been achieved in that direction. Now comes the turn of similar achievements with living plants. Human skill in the treatment of living matter, and science – in its branch dealing with living organisms – step in with the intention of doing for the art of food-growing what mechanical and chemical skill have done in the art of fashioning and shaping metals, wood and dead fibres of plants. Almost every year brings some new, often unexpected improvement.²⁸⁰

Kropotkin represented this relationship as the next step in science’s conquest over nature: science had progressed from wielding its power over dead matter to affecting living entities. What captivated Kropotkin most about developments in agriculture was the apparent ease with which science could modify life. The description of this effect was one of intervention, a form of interference whereby science ‘steps in’ with the intention of causing a change in nature. Kropotkin marvelled at how, in the hands of humanity, science’s intervention into nature was a ‘treatment’ of life. The application of science was a form of ‘art’, he wrote, a way of ‘fashioning’ living things: the shaping of nature in order to improve it.

Kropotkin thought that politics should occupy a similar position in its relation to society: it ‘must take, with regard to human societies, a position analogous to that which is occupied by Physiology with regard to plants and animals’.²⁸¹ Just as the physiologist moves from an analysis of a plant to an attempt to refashion and shape its life, politics must, after scientifically and statistically describing society, ‘step in’ and

²⁷⁹ Kropotkin, ‘Anarchism: Its Philosophy and Ideal’, p. 141.

²⁸⁰ Kropotkin, *Fields, Factories and Workshops*, p. 91.

²⁸¹ Kropotkin, *Modern Science*, p. 78.

transform it. If, as Kropotkin made clear, ‘the purpose of each science being prediction and application to the demands of practical life’, then science was not only necessary to know society, but the means through which politics could modify it.²⁸² Kropotkin’s epistemological and methodological assumptions I outlined in chapters one and two gave society content, character, and form. Together, they led to another important aspect of his outlook on reality: the idea that society was a malleable material which politics could alter and improve scientifically.

Kropotkin’s view that the relationship of politics to society is analogous to that of the physiologist to plant life is an apt metaphorical conception. Zygmunt Bauman and Scott both find the metaphor of gardening useful for their explorations and explanations of modernity. Bauman describes the coming of modernity as ‘a process of transformation of wild cultures into garden cultures’.²⁸³ The role of politics, he argues, increasingly took on the responsibility of the gardener to his garden, who continually tends, treats, and shapes a natural, though artificially constructed and intentionally ordered environment according to his instrumental and aesthetic views. The life of the garden is part of nature, but the conditions, limits, and purpose of its existence have been externally imposed and prescribed by the scientific norms of horticulture. Scott considers the project of the gardener as ‘an appropriate parallel’ to nineteenth-century visions of sweeping social transformation.²⁸⁴ The belief of the gardener that his technologies, tools, and botanical knowledge will maintain and improve garden life is illustrative of political designs for society. He not only has the task of administering life, through correct watering, choice of soils and composts, and allowance of light, but also bears the responsibility of taming its latent wildness. He must prune, cut, and weed out recalcitrant elements. Though levelled at individuals, his intervention always has as its main priority the health and beauty of the whole garden.

The gardening metaphor is appropriate as a way to understand Kropotkin’s conception of the relationship of politics to society. Indeed, his own reference to the analogy encourages us to think about his political approach to society as bearing resemblance to a physiologist peering down the microscope at a plant. Yet, for Kropotkin, the ideal relationship between politics and the social should not simply be comparable to plant physiology, but identical:

²⁸² Ibid.

²⁸³ Zygmunt Bauman, *Legislators and Interpreters: On modernity, post-modernity and intellectuals* (Cambridge: Polity Press, 1995), p. 51.

²⁸⁴ Scott, *Seeing Like a State*, p. 92.

We are [able] to undertake the study of the most arduous social questions in exactly the same way as the gardener on the one hand, and the physiologist on the other hand, study the most favourable conditions for the growth of a plant – let us do so!²⁸⁵

The relationship was not analogous. The responsibility of politics is identical to that of the gardener: to manufacture the environment in which life will be best able to develop. Again, Kropotkin takes metaphor and makes it real. The role of politics was to create the social conditions most favourable for the healthy life of human beings. Politics should condition the very existence of individuals and societies. Kropotkin's literalism sheds light on the connection between diagnosis and remedy in his political thought: the most pressing social problems should be identified and overcome with the same knowledge and method.

In this seamless transition from a faith in science's ability to explain, to an application of its power to transform, Kropotkin's thought moves along what Scott terms 'the path from description to prescription' that characterises his portrayal of high-modernist ambition.²⁸⁶ This broad theme of nineteenth- and twentieth-century political and social thought presupposes that far-reaching improvements to human life were possible if societies, like gardens, could be rationalised according to scientific knowledge:

[High modernism] is best conceived as a strong [...] version of the beliefs in scientific and technical progress that were associated with industrialization in Western Europe and in North America from roughly 1830 until World War I. At its center was a supreme confidence about continued linear progress, the development of scientific and technical knowledge, the expansion of production, the rational design of social order, the growing satisfaction of human needs, and, not least, an increasing control over nature (including human nature) commensurate with scientific understanding of natural laws. *High* modernism is thus a particularly sweeping vision of how the benefits of technical and scientific progress might be applied [...] in every field of human activity.²⁸⁷

Scott presents high modernism as a fluid ideology that could inform projects for social change conceived on the left, the right, and the centre of the political spectrum. It inspired revolutionary and non-revolutionary, state- and non-state-driven schemes to

²⁸⁵ Kropotkin, *Modern Science*, p. 74.

²⁸⁶ Scott, *Seeing Like a State*, p. 90.

²⁸⁷ *Ibid.*, pp. 89-90.

improve the human condition. ‘Its main carriers and exponents’, he writes ‘were the avant-garde among engineers, planners, technocrats, high-level administrators, architects, scientists, and visionaries.’²⁸⁸ Included in Scott’s Hall of Fame of high-modernism were figures such as Saint-Simon, Lenin, Leon Trotsky, and the Shah of Iran.

My motivation for leading the analysis of Kropotkin’s understanding of and approach to society into the terrain of high-modernism is not to add his name to Scott’s Hall of Fame. Neither do I wish to reinterpret Kropotkin as a high-modernist thinker who should be lifted from a context of anarchist political thought and understood in relation to technocrats, administrators, planners, and architects. My reasoning for this detour is two-fold. First, to reinforce the notion – one that Kropotkin repeatedly emphasised – that when he thought about society from a political point of view he did so as a scientist apprehending an organism: a reified entity that could be rationalised and improved through the application of scientific technique and knowledge. Second, to bring to light the fact that an anarchist thinker could share not only the conceptual approach, but also the broadly framed ambitions of often centralised, bureaucratic, imperative, hierarchically coordinated political agencies.²⁸⁹ I do not seek to illuminate Kropotkin’s wish for society to be rationally designed or his desire to tame nature in order to play down the significance of his anarchist politics. On the contrary, I draw attention to these central features of his worldview in order to assess their political implications for Kropotkin’s anarchism.

According to Scott, ‘the belief that it was man’s destiny to tame nature to suit his interests and preserve his safety is perhaps the keystone of high modernism’.²⁹⁰ The appeal of this possibility, he argues, ‘gripped intellectuals of almost every political persuasion’.²⁹¹ In order to convey its ubiquitous nature in nineteenth-century thought, Scott quotes a famous passage from the *Communist Manifesto* (1848) in which Marx

²⁸⁸ Ibid., p. 88.

²⁸⁹ In his most recent book, Scott acknowledges that utopian scientism ‘dominated much of anarchist thought around the turn of the twentieth century’. However, he provides no serious and in depth analysis of how this played out in particular brands of anarchist thought. Moreover, he does not explore, as I do in part two of this thesis, how scientific thinking may not always lead to the end of politics and the technocratic ‘administration of things’, but that it could transform and vitalise key anarchist principles. See James C. Scott, *Two Cheers for Anarchism: Six Essay Pieces on Autonomy, Dignity, and Meaningful Work and Play* (Princeton and Oxford: Princeton University Press, 2012), pp. xii-xxiv.

²⁹⁰ Scott, *Seeing Like a State*, pp. 94-95.

²⁹¹ Ibid., p. 94.

and Engels glorify capitalism's increasing command over nature.²⁹² This ambition was not only alive in authoritarian state-centric socialism, however, but in the anarchism of Kropotkin. Although a naturalised vision of society was his prime target, the transformative ambition to 'tame' embraced the whole of nature. Society was but part of a larger, natural world, whose existence could also be explored, altered, and improved. In the opening chapter of *The Conquest of Bread*, Kropotkin lauded the ability of humanity to conquer nature and submit it to the demands of scientific and technological modernity:

Thousands of highways and railroads furrow the earth, and pierce the mountains. The shriek of the engine is heard in the wild gorges of the Alps, the Caucasus and the Himalayas. The rivers have been made navigable; the coasts, carefully surveyed, are easy of access; artificial harbours, laboriously dug out and protected against the fury of the sea, afford shelter to the ships.²⁹³

Kropotkin's pride at the technological progress of the nineteenth century is qualified by the extent to which the forces of nature could be suppressed. Great mountain ranges, the once impenetrable emblems of nature, are cut open and pierced by the railway, whose artificial scream dominates the soundscape of the wild environment. Man-made modifications are sliced into the coastlines, where the once terrifying and capricious fury of the ocean now lays timid and tamed. Kropotkin equated progress with victory over a powerful, though potentially submissive natural world.

Kropotkin's stories of humanity's successful conquests over nature during the nineteenth century continue in *Fields, Factories and Workshops* where he describes the weapons that have made nature bend to the will of progress: 'the formidable array of implements, machines, and prime-motors [...] has shown to humanity how to utilise and manage the forces of nature'.²⁹⁴ The totalising ambition to break nature's resistance was a prerequisite to its manipulation. The strength of human knowledge over nature was, as Kropotkin put it, 'formidable': in its desire to progress, humanity wielded an impressive, though intimidating power over a world that it sought to control.

Society would not escape this formidable quest for control. While recognising that human skill, knowledge, and ingenuity were the agents behind its transformative

²⁹² Ibid.

²⁹³ Kropotkin, *The Conquest of Bread*, p. 13.

²⁹⁴ Kropotkin, *Fields, Factories and Workshops*, p. 207.

ambitions, Kropotkin analysed human societies as natural phenomena and thus placed them at the mercy of rational science. He had a double assessment of humanity as both transformer and transformed. Progress was about humanity's increasing power over itself, an effort to tame and manage the forces of its own nature. Humanity's natural status qualified society as a legitimate realm for intervention.

The ambition to improve society with politically administered science involved an effort to change it according to the most advanced technical standards. Forms of personal and social life, it seemed, could be changed for the better. Through the total application of machinery to the domestic realm, technology could not only improve people's daily lives, but transform their existence. Domestic work and the laborious activities of the day would benefit from mechanisation. 'Machinery of all kinds', Kropotkin argued, could be 'introduced into households'.²⁹⁵ Machines for blackening boots, for washing and cleaning could not only make life easier, he argued, but would create the opportunities for human beings to experience a quickened, rationalised pace of living. In *The Conquest of Bread*, he endowed modern technology with the power to engineer new forms of life and social interaction. He spoke of

machinery palaces where [people] will spend their five or six hours of leisure; where they will make experiments; where they will find others, experts in other branches of industry, likewise coming to study some difficult problem, and therefore able to help and enlighten each other, the encounter of their ideas and experiences causing the longed-for solution to be found.²⁹⁶

For Kropotkin, scientific technology should occupy a special position in society: as a new master of men, machinery belongs in the majesty of palaces. Technology can allow for humanity's experimentation with and control over nature. The application of machinery to social life could solve society's problems: it could manufacture new ways of living. Kropotkin presented the shaping qualities of mechanical intervention as potentially limitless. Its effects could even reach the minds of human beings, elevating their consciousness to new, enlightened heights.

The peasantry posed a particular problem to Kropotkin's totalising ambition to scientifically modernise the social realm. As the least modernised part of nineteenth-century European societies, rural life represented to him a huge part of nature yet to be

²⁹⁵ Kropotkin, *The Conquest of Bread*, p. 112.

²⁹⁶ *Ibid.*, p. 103.

tamed by rational science. This was a general obstacle that appeared to stand in the way of many modernising projects and ambitions in nineteenth-century social and political thought. In the 1870s, Russian Populist Petr Lavrov (1823-1900) saw the same overwhelming problem of a peasant population whose traditional ways of life stood in contrast to the prescriptions of progress. In ‘Historical Letters’ (1870), he summed up the problem that Kropotkin would face later in the century: ‘The majority [...] set up idols in place of truth and justice, or they limit themselves to truth and justice in thought but not in life, or they do not want to see what an insignificant minority enjoys the advantages of the progress of civilization’.²⁹⁷ In his discussion of nineteenth-century scientific modernity, David L. Hoffmann highlights the same problematic aspects of traditional peasant life set out by Lavrov. Religious faith stood in the way of rational thought and the pursuit towards objective standards of scientific truth. Rural life lacked modern technological forms of production, transportation, and communication. And the countryside remained bound in local contexts, not yet integrated into broader economic and political frameworks.²⁹⁸

Kropotkin confronted the same obstacles in peasant life. He believed they could be overcome with the extensive application of scientific thought and technology to the countryside. He argued that farming could not continue with its traditional methods and that it should take on an industrial character: ‘Cultivation of the soil is no longer possible without machinery’, he argued, ‘without great irrigation works, without railways, without manure factories’.²⁹⁹ Owing to the intervention of scientific technology, the peasant commune would cease to be an isolated, disconnected vestige of a pre-modern world, and would become part of a highly industrialised, interconnected social whole. With the telegraph, railway, and machines the commune of the nineteenth century could not hope ‘to enclose itself within its walls’, but would try to ‘extend itself, to universalise itself’.³⁰⁰ The work and universe of the peasant would be transformed.

²⁹⁷ Petr Lavrov, ‘Historical Letters’ [1870], in *Russian Philosophy*, 3 vols, II, pp. 123-69 (p. 144). On Lavrov’s life and ideas, see Philip Pomper, *Peter Lavrov and the Russian Revolutionary Movement* (Chicago and London: The University of Chicago Press, 1972).

²⁹⁸ David L. Hoffmann, ‘European Modernity and Soviet Socialism’, in *Russian Modernity: Politics, Knowledge, Practices*, ed. by David L. Hoffman and Yanni Kotsonis (London: MacMillan Press Ltd., 2000), pp. 245-60 (p. 248).

²⁹⁹ Kropotkin, *The Conquest of Bread*, p. 175.

³⁰⁰ Petr Kropotkin, ‘The Commune’, in *Words of a Rebel*, pp. 81-89 (p. 85). Originally appeared in *Le Révolté* as ‘La Commune’ (1880).

Art of Government

Kropotkin was not alone in insisting that politics was a form of social gardening. It was an idea that resonated with Western political thought in the late nineteenth century as it strove to submit nature further and further to the demands of modern civilisation. In ‘*Evolution and Ethics: Prolegomena*’ (1894), for example, Huxley described the politics of modernity as a ‘horticultural process’.³⁰¹ By ‘the intervention of man’, wild nature – including human nature and the life of societies – was being ‘made into a garden’.³⁰² Huxley recognised that the key characteristic of horticultural politics is that of establishing the conditions in which the life of the garden grows: ‘The tendency of the horticultural process is the adjustment of the conditions to the needs of the forms of plant life which the gardener desires to raise’.³⁰³ In his emphasis on the responsibility of politics to adjust and arrange the conditions of societies most favourable to the life of individuals, Huxley shared the same concern later put forward by Kropotkin: the primary object of politics is a conception of society itself, understood as a set of conditions, parameters, limits, and allowances in which the life of a certain type of person will develop. Huxley reiterates the point: ‘The gardener [...] attempts to modify the conditions, in such a manner as to bring about the survival of those forms which most nearly approach the standard of the useful, or the beautiful, which he has in mind’.³⁰⁴ With the same rationale as the gardener, politics seeks to reach and affect the life of individual organisms by modifying their environment. It hopes to encourage desirable ways of life not in direct contact with individuals, but by intervening in the realm of their existence.

Huxley saw in the activity of gardening the qualities and intentions of the artist. Through metaphor he suggests that political interventions into society bring about an artificial environment for human life:

It will be admitted that the garden is as much a work of art, or artifice, as anything that can be mentioned. The energy localised in certain human bodies, directed by similarly localised intellects, has produced a collocation of other material bodies which could not be brought about in the state of nature. The

³⁰¹ Thomas H. Huxley, ‘*Evolution and Ethics: Prolegomena*’ [1894], in *Evolution and Ethics and Other Essays*, pp. 1-45 (p. 11).

³⁰² *Ibid.*, p. 9.

³⁰³ *Ibid.*, p. 13.

³⁰⁴ *Ibid.*, p. 14.

same proposition is true of all the works of man's hands, from a flint implement to a cathedral or a chronometer; and it is because it is true, that we call these things artificial, term them works of art, or artifice, by way of distinguishing them from the products of the cosmic process, working outside man, which we call natural, or works of nature.³⁰⁵

When Kropotkin described humanity's intervention into food growing as a form of art, I think he had in mind the process outlined by Huxley. Scientifically and technologically aided agriculture, he believed, produced artifice from nature. It brought into existence something man-made that resulted from the imposition of human-willed form onto the otherwise formlessness of the wild. Farms, greenhouses, vegetable plots, and manure factories all imposed new forms on nature that were distinguishable from its 'original' or 'natural' state.

Politics, in its intentions to modify the social realm, also aspired to artistry. Kropotkin's conception of politics as a constant 'gardening' of the conditions of human life and a taming of nature rested on the notion that human beings could take control over and manufacture the world in which they lived. According to Foucault, this ambition represents a new idea of politics that came about in Europe during the late eighteenth century and which came to characterise the expectations of politics in the nineteenth century. Before the appearance of the technologies to count and visualise populations, and the forms of knowledge to analyse them, he argues, politics was conceptualised as an art of rulership. Foucault describes how in *The Prince*, Machiavelli advises political power about how to rule and keep one's principality:

The objective of the exercise of power [in *The Prince*] is to reinforce, strengthen and protect the principality, but with this last understood to mean not the objective ensemble of its subjects and territory, but rather the prince's relation to what he owns [...]. [I]t is essentially a treatise about the prince's ability to keep his principality.³⁰⁶

By contrast, the new notion of politics that became prominent in the nineteenth century differed from the art of rulership in that it had as its object not the territory and subjects of a principality, but an ensemble of relationships between living beings and the conditions of their existence. Foucault suggests that the idea of an art of

³⁰⁵ Ibid., pp. 10-11.

³⁰⁶ Michel Foucault, 'Governmentality', in *The Foucault Effect*, pp. 87-104 (p. 90).

government emerged, whose exercise of power was targeted at the arrangement of social reality.

Foucault argues that the art of government addressed ‘a set of problems specific to the issue of population’.³⁰⁷ But what were the problems specific to life and its environment that the art of government sought to reconcile? A look down the list of Kropotkin’s concerns in *The Conquest of Bread* offers an insight into the problems of population facing politics in the late nineteenth century: housing, disease prevention, poverty, domestic work, urban planning – including electrification, sanitation, the securing of public leisure space, street paving and lighting – transportation, communication, education, food, clothing, and water supply. In dealing with such problems specific to populations, Kropotkin’s thought shows the horticultural aspect to the art of governing: it required a continual process of detailed adjustment. It aspired towards the artificial organisation of nature that best corresponded to standards of health, utility, and beauty.

Such were the set of problems specific to the issue of population. Together, they constituted the holistic arena for the intervention of politics: the social. As Hoffmann shows, by Kropotkin’s time this ‘new realm’ had become the recognised space in which political authority found its sphere of application:

‘The social’ [was] a new realm created in the late nineteenth century when a variety of problems were grouped together and acted on by a body of governmental officials and qualified personnel in the fields of medicine, social work, demography, urban planning, and social hygiene.³⁰⁸

Although he could specify individually the manifold problems facing humanity in an industrialising and urbanising world – disease, overcrowding, poverty, famine, etc. – Kropotkin often grouped them together under a broader term: ‘the great social question’: the state of the garden itself.³⁰⁹ Only if this social realm were treated scientifically, he insisted, could it be affected and improved.

The problem for politics, therefore, was the task of arranging the social realm in such a way that the needs of the population would be met. Kropotkin understood this as a matter of economy. This did not mean managing a complex monetary flow, but governing the relationships, operations, functions, and processes of the social field.

³⁰⁷ Ibid.

³⁰⁸ Hoffmann, ‘European Modernity and Soviet Socialism’, p. 250.

³⁰⁹ Kropotkin, *Fields, Factories and Workshops*, p. 203.

Kropotkin's use of the word 'economy' follows the meaning it takes on from the eighteenth century, described by Foucault as an idea 'to designate a level of reality, a field of intervention'.³¹⁰ While the economy or arrangement of the social realm was Kropotkin's primary concern, he was able to describe desired economies of smaller fields of reality which could be secured through the intervention of politics. He showed how the productivity of working populations in large industrial works, for example, could be improved through the arrangement of the things constituting its reality: 'In these works, light, cleanliness, the space allotted to each bench, are but a simple question of economy. Work is better done when you can see what you do, and have elbow-room'.³¹¹ Kropotkin's idea of political intervention, then, although non-hierarchical, is one of populations exercising power over themselves through the creation of new economies. It is a politics that allows populations to affect their condition – increase their productivity, improve their health – by adjusting the world around them, and thus relations within them, in accordance with pre-determined scientific norms.

What did it mean for politics to intervene and 'economise' social reality? For Kropotkin, this involved the same process of 'adjustment' that he considered applying to large factories. The political art of economising society was, as Foucault describes, not concerned with managing territories and inhabitants, but with governing 'a complex of men and things'.³¹² The target of politics, the place where it acquires meaning as a power capable of affecting life, is the nexus of human beings and things: the social realm. The words of Foucault help illustrate the forces that came together to produce this interconnected level of reality:

The things which this sense of government [the art of government] is to be concerned are in fact men, but men in their relations, their links, the imbrication with those other things which are wealth, resources, means of substance, the territory with its specific qualities, climate irrigation, fertility, etc.; men in their relation to that other kind of things, customs, habits, ways of acting and thinking, etc.; lastly men in their relation to that other kind of things, accidents, and misfortunes such as famine, epidemics, death, etc.³¹³

³¹⁰ Foucault, 'Governmentality', p. 93.

³¹¹ Kropotkin, *The Conquest of Bread*, p. 108.

³¹² Foucault, 'Governmentality', p. 93.

³¹³ Ibid.

Kropotkin is similarly concerned with the imbrication of men and things described by Foucault. Politics is a question about how ‘things are arranged’.³¹⁴ Political intervention can address the ‘social question’ in so far as it can arrange the relations between people, between people and their environment, and between people and their nature. His ideas for the altering of urban space, increased public hygiene, technological production, the dissemination of rational thought throughout the expanses of rural life, allotted leisure time, etc. are all, as he put it, ‘arrangements’.³¹⁵ They are invested with the intention of governing an ensemble of relations.

The following sets of specific proposals Kropotkin put forward for affecting the social realm show his belief that politics should aspire to modify the arrangement, or economy, of people and things. In *Memoirs of a Revolutionist*, he wrote about politics as a constructive activity in whose jurisdiction should be things like ‘dwellings, gas works, supplies of food, sanitary arrangements, etc.’³¹⁶ In ‘Anarchism’ (1910), he continued to emphasise the necessity to scientifically arrange the social realm. Science should be applied ‘for all possible purposes: production, consumption and exchange, communications, sanitary arrangements, education, mutual protection, defence of the territory, and so on’.³¹⁷ Clearly Kropotkin had in mind a radical reordering of the economy of the social realm. A new, ordered economy would transform peoples’ relations to each other through technologised communications and rationalised urban housing, their relations to resources by altering modes of production and consumption, their relations to thought and behaviour through educational arrangements, and their relations to the accidents of famine and epidemics through food supply and sanitation.

This style of gardening politics pursued a definite objective. Scientific arrangements of society aimed to ‘guarantee the necessities of life to its inhabitants’.³¹⁸ He invested politics with the power to achieve its chief end – securing a healthy population – not by the imposition of laws, but by the disposition of elements constituting the social realm. In this sense, Kropotkin’s conception of political power is again typical of what Foucault describes as the nineteenth-century art of government: politics could most effectively govern life not by ‘imposing laws on men;

³¹⁴ Kropotkin, *The Conquest of Bread*, p. 37.

³¹⁵ *Ibid.*, p. 34.

³¹⁶ Kropotkin, *Memoirs*, p. 398.

³¹⁷ Petr Kropotkin, ‘Anarchism’ [1910], in *The Conquest of Bread and Other Writings*, pp. 233-47 (p. 233). Originally appeared in the *Encyclopaedia Britannica*.

³¹⁸ Kropotkin, *The Conquest of Bread*, p. 87.

but [by] disposing things: that is to say, of employing tactics rather than laws'.³¹⁹ For Kropotkin, this form of government embodied the artificial qualities of politics: the ambition to scientifically modify the arrangement of society in order to affect the life of its human constituents:

We may define this science as: *The study of the needs of mankind, and the means of satisfying them* [...]. Its true name should be *physiology of society*. It constitutes a parallel science to the physiology of plants and animals, which is the study of the needs of plants and animals, and of the most advantageous ways of satisfying them. In the series of sociological sciences, the economy of human societies takes the place occupied in the series of biological sciences by the physiology of organic bodies.³²⁰

Kropotkin's social physiology is a version of the art of government. Its method was tactical: to govern human life by the very intentional and rational disposing of the things and relationships of the social field. Its objective was biological: to improve social health and satisfy human needs. His expectation of politics was artistic: the taming, management, and modification of nature into distinctly artificial forms.

³¹⁹ Foucault, 'Governmentality', p. 95.

³²⁰ Kropotkin, *The Conquest of Bread*, p. 159.

Part Two

The Diagnostic and Remedial Politics of Anarchism

4 The State

*The plague is already on our doorsteps; we must destroy its causes, and even if we have to proceed by fire and iron, we must not hesitate. It is a question of the salvation of humanity.*³²¹

Kropotkin, 'The Inevitability of Revolution' (1882).

Kropotkin's article 'The Inevitability of Revolution' diagnosed the problems facing the modern world. He evaluated the state of Western civilisation with fearful pessimism. After outlining the features of its decline, drawing on ideas of degeneracy that I discussed in chapter one, the article finished with a summary about the affliction of society in the late nineteenth century. Human beings faced a biological threat: their bodily health suffered from epidemics of contagious diseases. As a species, humanity's existence was in danger of coming to an end. Degeneration, however, was an effect that could be understood, checked, and reversed if its causes could be known scientifically. In order to be saved from certain death, humanity would have to locate the origins of its own disorders. The great scientific task facing anarchism in the late nineteenth century was to prevent extinction by eradicating the causes of the plague.

Kropotkin found many of the causes of the plague in the modern state. The decline of human beings was an effect of political regimes that created the conditions and environments in which they lived. His attempt to highlight the state's damaging relationship to the human condition built on a nineteenth-century tradition of anarchist political thought: anarchists throughout the century had tried to lay bare the political roots of what they took to be the negative, undesirable features of social existence. Although Kropotkin was contributing to anarchism's nineteenth-century project of unmasking the power of the modern state, the power he sought to expose was more than authoritarian, but a bio-power that threatened biological existence. In its arrangement and management of the world, Kropotkin saw not only the propensity of the modern state to dominate over people, but its tendency to infect and contaminate.

³²¹ Kropotkin, 'The Inevitability of Revolution', p. 33.

Kropotkin traced the development of the modern state in 'The State: Its Historic Role' (1896). His analysis presented a narrative of an interdependent, dual process of historical change: the more powerfully the state took hold of society, the unhealthier its life became:

The state emerges...and then – death! Yes: death – or renewal! *Either* the state forever, crushing individual and local life, taking over in all fields of human activity, bringing with it its wars and its domestic struggles for power [...] and inevitably at the end of this development there is...death! *Or* the destruction of the state, and new life starting again.³²²

Kropotkin identified the increasing strength of the state with humanity's greater proximity to death. It was a critique that made sense within his biological understanding of politics. The failure of state politics was betrayed by the degenerate state of society. For Kropotkin, this was a yardstick for politics that underpinned his theory of the state. Its pestilential effects could be read in bodies and minds, in defective changes empirically verified by scientific investigation. Moreover, the biological menace of the state was measurable: statistical studies of society could count its diseases, suicides, crimes, and insanities. Knowledge of the threat of the state was accessible through scientific study.

Knowing the Enemy

Saul Newman highlights anarchism's distrust of the state as the driving force behind its critique of Marxism in the nineteenth century. Through this critique, he argues, anarchism had succeeded in both locating the place and scrutinising the operation of power:

The anarchist critique exposed Marxism's inadequacy in dealing with questions of noneconomic power and authority: by reducing political power to economic power, by seeing the economy as ultimately determining, Marxism has failed to take account of other autonomous sources of power and has thereby neglected their dangers [...]. Anarchism, on the other hand, has, through its confrontation with Marxism, opened the way for a critique of these noneconomic forms of

³²² Petr Kropotkin, 'The State: Its Historic Role', in *Selected Writings*, pp. 211-64 (p. 264). Originally appeared in *Les Temps Nouveaux* as 'L'Etat, son rôle historique' (1896).

power. By breaking the hold economic determinism had on radical political theory, anarchists have allowed power to be studied in its own right.³²³

In its interrogation of the centralised political authority of states, anarchism had isolated a form of power seemingly invisible to the Marxist. An exclusive focus on society as the place of power and domination, with its class structures and social relations, blinded Marxism from the autonomous, determining power intrinsic to political states. In contrast to the Marxist view of the state's neutrality, and thus its possible instrumentalisation as a tool of revolution, anarchism invests the state with its own agency and force. At the hands of the anarchists, political power is stripped of its status as a resultant of the economic base.

What is this power that springs from the very existence of the state? Newman looks to the poles of a Manichean binary between artificiality and 'naturalness' that he sees at the heart of anarchist thought. Though 'man-made', the artifice of the state and the artificiality of its authority stand in an antagonistic opposition to humanity conceived as a 'natural', living phenomenon, and the human being as a 'natural', organic entity.³²⁴ This was an oft-used distinction in nineteenth-century political thought. Marx used a similar dichotomy between state and society, terming the state 'a parasite feeding upon, and clogging the free movement of, society'.³²⁵ Mill began 'Considerations on Representative Government' (1861) by comparing two opposing interpretations of government: one as manmade 'invention or contrivance', the other as 'a sort of organic growth from the nature and life of [...] people'.³²⁶ In lifting the veil from the state, anarchists wanted to show that Mill's first interpretation is correct: the state exists outside of nature. Bakunin wrote powerfully on this theme. The power he saw lurking in the state represented 'something apart' from the nature of society, an 'external' force over and above but never part of life. His description of state power took many forms: at times, when allied to the church, it was 'spiritual and/or divine',³²⁷ and in other cases it was simply the 'mechanical' force of political

³²³ Saul Newman, *From Bakunin to Lacan: Anti-Authoritarianism and the Dislocation of Power* (Oxford and Maryland: Lexington Books, 2001), p. 37.

³²⁴ *Ibid.*, pp. 38-39.

³²⁵ Karl Marx, 'The Civil War in France' [1871], in *Selected Writings*, ed. by David McLellan (Oxford: Oxford University Press, 2011), pp. 584-96 (p. 588).

³²⁶ Mill, *On Liberty and Other Essays*, pp. 205-06.

³²⁷ Mikhail Bakunin, *Bakunin on Anarchy: Selected Works by the Activist-Founder of World Anarchism*, ed. by Sam Dolgoff (London: George Allen and Unwin Ltd., 1973), pp. 226-38.

despotism.³²⁸ At all times, however, the power of the state acquired its meaning through its opposition to nature.

The struggle with Marxism in the nineteenth century forced anarchists to place state power at the centre of their political philosophies. It became something to expose, a powerful agent with unique characteristics. Owing to its artificial form, anarchists tended to study the state and its power in political terms. They described its illegitimacy, its capacity to dominate, oppress, and repress. They warned how it limited freedom and crushed liberty. They berated its intensification of inequality. Such was the suitable method of investigation for something so far removed from nature. The methodologies and epistemologies of science, on the other hand, dealing with the natural world, of which humanity was a part, were ill equipped or simply wasted as a means to study the state. The anarchists, rather, subjected it to a political analysis that took into account its synthetic qualities.

Kropotkin also looked to Marxism when developing an anarchist theory of state power. Critiquing ‘state socialism’ proved a useful exercise in his writings, allowing him to expose to his readers the form of power that anarchism seeks to destroy. In *Modern Science and Anarchism*, he told a story of the origins of Marxist, ‘authoritarian’ socialism in order to unmask political power:

However, these Revolutionists appeared under two different aspects. Some of them, while rebelling against the authority that oppressed society, in nowise tried to destroy this authority; they simply strove to secure it for themselves. Instead of a power that had grown oppressive, they sought to constitute a new power, of which they would be the holders; and they promised, often in good faith, that the new authority, handed over to them, would have the welfare of the people at heart and would be their true representative – a promise that later on was inevitably forgotten or betrayed. Thus were constituted Imperial authority in the Rome of the Caesars, ecclesiastical authority in the first centuries of our era, dictatorial power in the decaying cities of the Middle Ages, and so forth. The same line of thought brought about royal authority in Europe at the end of feudal times. Faith in an emperor “for the people,” a Caesar, is not yet dead, even in the present day.³²⁹

Rather than overcoming or eradicating power, Marxism simply secures its existence in another guise. Kropotkin points to the fact that Marxism’s revolutionary act merely

³²⁸ Mikhail Bakunin, *Statism and Anarchy* [1873], ed. and trans. by Marshall S. Shatz (Cambridge: Cambridge University Press, 2005), p. 10.

³²⁹ Kropotkin, *Modern Science*, p. 3.

reaffirms the place of power.³³⁰ The reason for Kropotkin's critique of Marxism, to stress once more, is to uncover and pinpoint the state as the bearer of power and as the enemy against which anarchism will channel its forces.

In the same vein as other anarchists, then, Kropotkin exposed the power of the state, as Newman says, to be studied as something in its own right. But how exactly would he study it? It must be remembered that the idea of study for Kropotkin, as we saw in chapters one and two, was a scientific activity, a process of investigation in which empirical objects could be observed, tested, measured, made visible, and explained. Studying something meant to explore it scientifically, always with the view to tell the truth about its existence in the world. Study was a practice of knowledge acquisition, an attempt to bestow form to the unknown. It was an exercise opposed to metaphysical, religious, spiritual, or any other set of explanatory frameworks that sought conclusions outside of nature. Kropotkin trusted in only one method of study when seeking knowledge of the state and its political power: 'True to our method', he declared in *Modern Science and Anarchism*, 'we study the state with the same disposition of mind as if we studied a society of ants or bees, or of birds which have come to nest of the shores of an Arctic lake or sea.'³³¹ While acknowledging, perhaps, the aberrational character of the state, like the temporary nesting of gulls on the cliff-side, Kropotkin maintains the applicability of the scientific method when passing from wildlife to politics. Here, Kropotkin's essential epistemological and methodological outlook on reality produces a major twist in his political interpretation of anarchism. The forms of knowledge that he used to understand and explain the world would not be abandoned when identifying the threat of the state. Far from an artificial construct inaccessible to natural science, the state would be treated as if it were part of nature, 'a form of society' which, like other natural phenomena, had 'developed [...] under the influence of a series of causes'.³³² The biologist's 'disposition of mind', therefore, was essential to anarchism's political task of dissecting the state, of laying bare the intimate details of its existence and, not least, of scrutinising its power.

In order for Kropotkin to gain knowledge of the state and become familiar with the power of the enemy, modern forms of scientific knowledge and measurement had to be applied to all aspects of its life. As parts of nature, its institutions, apparatus, and

³³⁰ For a discussion of Newman's concept of 'the place of power', see *From Bakunin to Lacan*, pp.1-7.

³³¹ Kropotkin, *Modern Science*, p. 80.

³³² *Ibid.*

political organisation must be made subordinate to the authority of science. As Kropotkin pointed out, anarchism ‘represents an attempt to apply the generalisations obtained by the inductive-deductive method of the natural sciences to the appreciation of human institutions’.³³³ Integral to this epistemological conquest of the state would be an attempt to study the effects of its institutions on life. From Kropotkin’s perspective, the power of the state can truly be said to be studied in its own right when the impact of its institutions on social health is both illuminated by and made answerable to science. With Kropotkin’s approach to the state, its political power could be explained and visualised as something biological.

“Nests of Infection”

In answer to the question ‘*what is anarchism?*’, David Miller sets out to unpack the charges anarchists have levelled against the state. He suggests one of their main arguments is that ‘the state is a *punitive* body, which inflicts cruel and excessive penalties on those who infringe its laws’.³³⁴ Through prisons, exile, labour camps, and other penal mechanisms, the state demonstrates its punitive relation to society. Its power is exerted institutionally across its territory through forms of punishment that are localised and contained in particular penal settings. Within the spaces of the state’s political jurisdiction, citizens who violate its laws are liable to suffer at the hands of a highly coordinated and centrally administered system of punishment.

Prisons, in particular, have provided anarchists the opportunity to isolate a site within the state in which to explore and condemn the infliction of its power over individuals. They are exposed as locations seemingly representative of the broader violent and dominating relation of the state to its population. Anarchists believe that prisons are indicative of the state’s fundamental opposition to liberty: the irreconcilable tension between freedom and power essential to the existence of states is exemplified by the regulated and controlled patterns of life behind the prison walls. Anarchists are interested in the prison as a space wherein a power specific to states finds its unobstructed means of expression. The idea of power associated with the state, described by Nathan Jun as ‘essentially hierarchical, dominative and

³³³ Ibid., p. 91.

³³⁴ David Miller, *Anarchism* (London and Melbourne: J. M. Dent and Sons, 1984), pp. 6-7.

coercive',³³⁵ is embodied in the prison's organisation and practices: incarceration, confinement, separation, isolation, arbitrary violence, and torture exhibit the operation of a top-down form of authority. In revealing that prisons rest on a power that is wielded as a weapon, anarchists want to make a broader point about the nature of the state's relation to society. One can judge a state by its techniques of punishment.

Anarchist thinkers have made discussions of prisons central to their broader critique of political government. In the late eighteenth century, Godwin condemned government reliance on coercive power. 'Coercion first annihilates the understanding of the subject upon whom it is exercised', he warned, 'and then of him who employs it'.³³⁶ While coercion may return to ruin the rational capacity of its perpetrator as well as its victim, Godwin makes it clear that the power of punishment, like the political power of the state, is exercised *upon* people. It is a form of political domination that strikes vertically onto its recipients. In the mid-nineteenth century, French anarchist Joseph Déjacque (1821-1864) argued that 'the stirring of consciousness' is silenced by imprisonment.³³⁷ Thought became a victim of political power as it submitted to the domination of state punishment.

Kropotkin was one of the most prolific anarchists to address the question of punishment. His extensive exploration of the prison as a site in which to expose the power of the state was distinctively anarchist.³³⁸ Investigating the practice of punishment, however, allowed him to reveal state power as a biological problem. His extensive writings about the St. Peter and Paul fortress in St. Petersburg, Sakhalin Island, and late Imperial Russia's wider system of exile in Siberia, were investigations that emphasised the way that the Russian state sickened prisoners and convicts through its penal policy. Similarly, his descriptions of the French prisons of Lyon and Clairvaux attempted to demonstrate the epidemiological nature of the Third Republic's

³³⁵ Jun, *Anarchism and Political Modernity*, p. 136.

³³⁶ William Godwin, *Enquiry Concerning Political Justice and Its Influence on Modern Morals and Happiness* [1793] (Harmondsworth: Penguin Books Inc., 1976), p. 639. On the dimensions of Godwin's thought considered anarchistic, see John P. Clark, *The Philosophical Anarchism of William Godwin* (Princeton, New Jersey: Princeton University Press, 1977); Crowder, *Classical Anarchism*, pp. 39-73.

³³⁷ Joseph Déjacque, 'The Revolutionary Question' [1854], in *Anarchism: A Documentary History of Libertarian Ideas*, ed. by Robert Graham, 3 vols (Montréal, New York, and London: Black Rose Books, 2005), I, pp. 60-63 (p. 62). For more on Déjacque, see Janine C. Hartman, 'Transatlantic Spartacus', in *The Afterlife of John Brown*, ed. by Andrew Taylor and Eldrid Herrington (New York and Basingstoke: Palgrave Macmillan, 2005), pp. 145-58.

³³⁸ David Miller claims that Kropotkin's opposition to 'the institutions of penal law' is common to anarchist thought more generally. Their stance reflected a belief that state penal systems 'ignored the social sources of most criminal activity'. David Miller, 'The Neglected Kropotkin', *Government and Opposition*, 3, 18 (1983), 319-38 (p. 327).

punitive relation to the population of France. When Kropotkin wrote about the experience of the prisoners within these penal institutions, he focused on how they suffered from illnesses that developed as a result of their imprisonment. The most noticeable, significant, and condemnable effect of the political act of incarceration, Kropotkin believed, was the worsening or destruction of the prisoner's physical and moral condition.

When Kropotkin reflected on the imprisonment of the Russian radical writer Pisarev in the St. Peter and Paul fortress between 1864 and 1868, what struck him was the fact that 'when he came out of prison his health was already broken'.³³⁹ Although the Russian state had denied Pisarev his civic liberty, its impact on his existence as an organism registered most with Kropotkin. Similarly, when writing about his own experiences of imprisonment in St. Petersburg, Kropotkin emphasises the danger it posed to his health. On entering his cell in the St. Peter and Paul fortress in 1874, he anticipated that the most severe effects of state punishment would not be felt politically – in a longing for freedom – but biologically, in the decline of his bodily strength. 'The main thing', he realised, 'is to preserve my physical vigor. I *will* not fall ill.'³⁴⁰ His resolution proved futile. Two years later he succumbed to serious illness. The conditions of the prison, created and maintained by the state, were the causes he identified behind his deterioration:

I did my best to maintain my energy, but the "arctic wandering" without an interruption in the summer got the better of me. I had brought back from my Siberian journeys the slight symptoms of scurvy; now, in the darkness and dampness of the casemate, they developed more distinctly; that scourge of the prisons had got hold of me.³⁴¹

Kropotkin's description of sickness as the 'scourge' of the prison provides an insight into his understanding of how state power operates through the prison. The common image of the scourge as a whip or lash would be representative of a coercive state power inflicted as torture, as an instrument of domination designed to crush the spirit and break barriers of resistance. With the lash, the state strikes the exterior of the prisoner, lacerating and slicing the skin. By designating scurvy as the scourge of the prison, Kropotkin is altering the anarchist conception of state power as displayed in the

³³⁹ Kropotkin, *Russian Literature*, p. 319.

³⁴⁰ Kropotkin, *Memoirs*, p. 346.

³⁴¹ *Ibid.*, p. 363.

prison. State power shifts from an infliction, an act of political domination, to an infection, a power that reaches into the depths of humanity's organic structure.

Kropotkin's critique centres on the state's mismanagement of life within the prison. As I discussed in chapter three, he thought it was in the disposition of the social field, in its economy of men and things, that social health could be affected by politics. As one of the features of its political power, the state's arrangement of things within the prison walls – the inmates, their relations to each other, and their relation to the conditions of their existence – provided the fertile ground in which disease could grow and spread. Moreover, Kropotkin's belief in the Lamarckian theory of adaptation, part of his epistemological armoury of which I outlined in chapter one, allowed for this critique of state power: if environments operate at all times on living beings, causing reactions to take place in their bodies, then the threat of the state resides in the conditions – the filth, dampness, darkness, overcrowding, uncleanliness – it establishes for human beings to live. That these conditions are conducive to contagion means the state compromises health. The power of the state, the scourge of the prison, moves indirectly from the political environment into the bodies of its inhabitants.

It is on this basis that Kropotkin was able to condemn prisons as 'nests of [...] infection'.³⁴² Environments engendered by the state for political purposes expose human beings to epidemics. In *In Russian and French Prisons*, he assessed a prison in Kiev in these terms:

At Kieff, the gaol was a sink of typhus fever. In one month in 1881, the deaths were counted by hundreds, and fresh batches were brought in to fill the rooms of those removed by death. This was in all the newspapers. Only a year afterwards (June 12, 1882), a circular from the Chief Board of Prisons explained the epidemics as follows: – "1. The prison was dreadfully overcrowded, although it was very easy to transfer many of the prisoners to other prisons. 2. The rooms were very damp; the walls were covered with mildew, and the floor was rotten in many places. 3. The cesspools were in such a state that the ground about them was impregnated with sewage;" and so on, and so on. The Board added that owing to the same foulness other prisons were also exposed to the same epidemics.³⁴³

Clearly, the most striking feature of state punishment was the biological peril it generated for the prison population. A far greater concern to the prisoner than his loss

³⁴² Kropotkin, *The Terror in Russia*, p. 12.

³⁴³ Kropotkin, *Prisons*, p. 57.

of freedom, Kropotkin believed, was the invisible danger of the epidemic. Again, the political environment's effect on human life is of paramount importance in Kropotkin's critique: it was not the cells themselves, with their restrictions, confinements, and limitations that caused the greatest harm to prisoners, but their pathogenic condition and the economies of things within.

In a chapter entitled 'Exile in Siberia', Kropotkin persists with his bio-political critique of punishment. After discussing the 'terrible scurvy epidemics' that broke out in 1857 amongst convicts sentenced to hard labour in the Kara gold mines, he reflected on the situation sixteen years later:

And later on, in 1873, have we not seen again a similar epidemic, due to similar causes, breaking out in the Yeniseisk district, and sweeping away hundreds of lives at once? The places of torture, the proceedings were slowly modified, but the very essence of hard labour has remained the same, and the word *katorga* has still maintained its horrible meaning.³⁴⁴

Kropotkin recognised that the Great Reform era had 'modified' some of the punitive horrors of hard labour. A law passed in April 1863 had abolished such 'proceedings' as flogging with the lash and branding 'K-A-T' onto the forehead and cheeks of prisoners.³⁴⁵ By 1873, *katorga* – a sentence to a period of confined hard labour, second only to capital punishment in the 1845 Penal Code's hierarchy of criminal punishment – had lost some of the brutal and inflictive aspects of physical punishment that would have been present in 1857.³⁴⁶ Yet, Kropotkin suggests that even after such reform, by which many of the horrors of torture had been abolished, the essence of hard labour persisted and retained its fearful connotations in the popular imagination. But what was the horrible meaning of *katorga* if no longer associated with the vertically administered cruelty of torture? For Kropotkin, its essence lay in the vulnerability of the prisoners to the waves of scurvy. Unaffected by official changes to penal law, disease endangered prisoners with equal intensity in 1873 as it had done in 1857. Although Kropotkin condemned the harsh and relentless labour of Siberian exile, he

³⁴⁴ Ibid., p. 157.

³⁴⁵ Jonathan Daly, 'Russian Punishment in the European Mirror', in *Russia in the European Context*, pp. 161-88 (pp. 164-65).

³⁴⁶ For a comparative, historical discussion of *katorga* within the context of nineteenth-century European punishment, see Daly, 'Russian Punishment in the European Mirror', pp. 168-70. For a history of the punishment of branding in nineteenth-century Russia, see Abby M. Schrader, 'Branding the Exile as "Other": Corporal Punishment and the Construction of Boundaries in Mid-Nineteenth-Century Russia', in *Russian Modernity*, pp. 19-40.

understood its greatest threat to be the reduction of the physical state of the convict to the point where he can no longer fight off disease. The ‘similar causes’ of the outbreaks of 1857 and 1873 are the overworked, weak, and thus biologically exposed populations of convicts through which the contagion may easily spread. The worst aspect of hard labour is the draining of the organism’s energy to such an extent that it becomes the defenceless victim of fatal scurvy.

To be convincing, Kropotkin’s bio-political critique needed to find a way of illuminating the invisible movement and severity of epidemics. He could only label prisons as nests of infection if he could show the impact of disease upon populations at large. In order to illustrate this, Kropotkin turned to his trusted technique of visualising social processes: statistics. Following his discussion of the 1881 and 1882 typhus epidemics in Kiev, Kropotkin entertains the view that the situation may have improved:

It might be supposed that some improvements have since been made, and the reoccurrence of such epidemics prevented. At least, the official publication of the Statistical Committee for 1883 would support such a supposition. There remains, however, some doubt as to the accuracy of its figures. Thus, in the three provinces in Perm, Tombolsk, and Tomsk, we find only an aggregate of 431 deaths reported in 1883 among prisoners of all categories. But if we revert to another publication of the same Ministry – the Medical Report for 1883 – we find that 1017 prisoners died the same year in the hospitals of the prisons of the very same three provinces. And even in 1883, although no special epidemics are mentioned this year, the mortality at the two Kharkoff central prisons appears to have been 104 out of 846 inmates, that is, 123 in the thousand; and the same report states that scurvy and typhus continued their ravages in most Russian prisons, and especially on the way to Siberia.³⁴⁷

Kropotkin looks to official statistics for support of his political argument. His criticism of the Russian state is medical: it requires quantifications of health and sickness in order to track the spread of scurvy and typhus from its political centre outwards into the inmate population. The dangers of political punishment are made visible through the quantification of life processes. The technology of statistical mapping, discussed in chapter two, Kropotkin now employs in his anarchist attack on the state. His political arguments have a cool, neutral air of objectivity: his assertions are seemingly free from the distorting influence of emotional outrage. It is because the state’s power is

³⁴⁷ Kropotkin, *Prisons*, p. 58.

biological that objectivity is required: as part of nature, its impact on life could be observed, measured, and made visible.

The contagious clutches of the state, however, reached further than the confined spaces of penal servitude. Kropotkin argued that as an institution of state punishment the prison placed the health of the wider, non-penal population under threat. In *The Terror in Russia*, he passed from an exploration of the effect of the prison on prisoners to an assessment of its infectious assault on life outside the prison walls: ‘Last year it became known that several prisons were nests of typhus infection. Thus the *Ekaterinoslav* zemstvo reported that the *Lugansk* prison was a breeding-place of typhus for the city and the whole district.’³⁴⁸ Kropotkin’s critique of state power is not spatially limited by his use of the prison as a way to explore its effects. The nature of the power he exposes in the prison – epidemiological, transmissible – means that its reach will inevitably breach the site of its incubation. Because the power of the state moves through or, more accurately, feeds from the proximity between its subjects, Kropotkin’s concern shifts from the condition of the individual organism of the prisoner to the broader and more sinister problem of the state of social health. By turning his geographical attention to the realm of the city and the district, Kropotkin is thinking in terms of populations. The state’s threat to the population of Lugansk is conceived as an infection of the wider social organism.

It could be asked how this demographic weakening of social health ‘became known’, as Kropotkin put it. How was it possible to acquire knowledge of the centrifugal force of the state? His description of the situation in Kiev provides the evidence in support of his political critique:

The infirmary [of the Kiev prison], which has accommodation for 95 persons only, contained 339 sick prisoners, the average space which the patients were enjoying being only 210 cubic feet per person [...]. The mortality was appalling. From the prison the epidemic spread to the city of Kieff, with the result that the official figures for Kieff for the year 1908 were 9,150 cases of typhus, *out of which 2,188 were in the prison.*³⁴⁹

Kropotkin used official, scientific measurements of social health to form an image of contagion, a picture of decay accessible to the eyes of anyone who cared to look at the published data. Statistics allowed Kropotkin to show social suffering. It was a

³⁴⁸ Kropotkin, *The Terror in Russia*, p. 12.

³⁴⁹ *Ibid.*

necessary weakness of numerical political argumentation that personal experiences would be strikingly absent. Indeed, the contribution of statistics to Kropotkin's thought was to allow him to grasp the decline of a living entity – the social body – that could not be described on a personal level. Nonetheless, such statistical arguments against the state are a good example of Cole's description of statistical studies more generally: they are 'haunted by the absence of individual narratives, the untold stories of each particular case'.³⁵⁰

Part of Kropotkin's critique was a claim that prisons produce criminals. On the face of it, this assertion appears to be unrelated to Kropotkin's biological understanding of state power. Yet, the argument that the state, in creating criminals in prisons, reveals its biological danger, made perfect sense to Kropotkin within his broader medical understanding of deviance that I described in chapter one. If deviant behaviour was a consequence of an individual's poor medical condition, then crime could take on a literal biological dimension. Crime was but another sickness generated by state punishment and imparted to human beings, a plague with its roots in political punitive practice.

Kropotkin believed that physical illnesses bred in prison could cause crime from inside the body of infected prisoners. This idea about the biological causes of deviance was borrowed from the criminologists and psychiatrists he turned to for expert knowledge about crime. In *In Russian and French Prisons*, he stated his view that explanations for crime could be found within the body:

The influence of inherited faculties and of the biological organization on the inclination towards crime has been illustrated of late by so many highly interesting investigations, that we surely can form a nearly complete idea about this category of causes which bring men and women within our penal jurisdiction.³⁵¹

Kropotkin's political critique of state punishment shared in a scientific gaze into the body of the criminal that was common to late nineteenth-century criminology. He was enthusiastic about how the criminal, not his or her crime, had become an object of research. In this sense, Kropotkin's anarchism is indicative of how the importance of crimes faded into the background of criminological thought in the late nineteenth

³⁵⁰ Cole, 'The chaos of particular facts: statistics, medicine and the social body in early 19th-century France', p. 3.

³⁵¹ Kropotkin, *Prisons*, p. 345.

century, replaced by a fascination with the criminal man or woman. Foucault traces this historical development, showing how the gradual penetration of expert criminal psychiatry into European justice systems was accompanied by the receding significance of the crime itself: it became ‘nothing but a shadow hovering about’ the case of a particular criminal.³⁵²

The growing scientific significance of the body of the criminal proved fundamental to Kropotkin’s political thought: it granted him the conceptual possibility of channelling a political attack against the state by showing the condition of the bodies that inhabited prisons. As he wrote in *Memoirs of a Revolutionist* when describing the prison of Lyon, illnesses acquired in prison literally caused crime:

Flocks of children are also taken at certain hours to [the prison] yards. Thin, enervated, underfed, – the shadows of children, – I often watched them from my window. Anæmia was plainly written on all the little faces and manifest in their thin, shivering bodies [...]. What will become of them after they have passed through that schooling and come out with their health ruined, their wills annihilated [...]? Anæmia [...] is responsible for crime to an infinitely greater extent than plethora, and it is precisely this enemy of the human race which is bred in prison.³⁵³

Criminals were created and unleashed by the state. Degenerate defects, which were bred under the political jurisdiction of state prisons, found outward expression in the form of crime. The suffering victims of anaemia carried the state’s threat to public order within their bodies, smuggling its political power from inside the prison walls to the far reaches of society.

Alongside being a useful site in which to explore the nexus of political power, crime, and physical disease, Kropotkin used the prison to examine the relationship between the state, crime, and insanity. As I explained in the first chapter of this thesis, Kropotkin was interested in the ideas of British psychiatrist Maudsley and the apparent link he made between crime and madness: criminals were often the victims of psychological disorders. From this medicalised understanding of crime, based on contemporary expert knowledge, Kropotkin was able to attack the state as a ‘pestilential’ influence on moral health.³⁵⁴ The prison, especially cellular

³⁵² Foucault, ‘The Dangerous Individual’, p. 128.

³⁵³ Kropotkin, *Memoirs*, pp. 456-57.

³⁵⁴ Kropotkin, *Prisons*, p. 335.

imprisonment, he argued, demoralises prisoners and drives them to ‘insanity’.³⁵⁵ When Kropotkin argued in *The Terror in Russia* that prisons do not ‘answer their purpose’, their ‘double influence – the deterring and the moralising’, he was making a statement about crime and moral illness.³⁵⁶ The state demoralises individuals through prisons, and thus, by impairing their moral sense and pushing them to madness, it does not deter, but encourages crime.

Kropotkin thought that the state’s punitive technique of isolating prisoners worsened their mental condition, which in turn predisposed them to violent and immoral deviant behaviour. The life of an imprisoned individual, he wrote, ‘takes on such a character as to make it belong entirely to the domain of psychopathy. Kraft-Ebbing himself had no idea of the aspects it assumes with certain prisoners in solitary confinement’.³⁵⁷ Kropotkin’s reference to Krafft-Ebing (although he misspelt his name) suggests his belief in the psychiatric factuality of what would be, had the psychiatrist only known, clinically diagnosed cases of madness caused by the state. But how did the conditions of the prison create this psychopathy, and why did Kropotkin believe it would lead to criminal behaviour? The answer lies in the late nineteenth-century medical codification of madness I outlined in chapter one: the medicalised relationship between the will and the passions. As a popular calculus employed by nineteenth-century psychiatry, and to which Kropotkin looked for scientific explanations of morality, the delicate balance between the will and the passions was disrupted by state prisons. The passions, that could lead individuals to act in opposition to moral restraint, were intensified and diseased in prison:

And if [the prisoner] has got into trouble in consequence of a morbid development of the passionate, sensual side of his nature, now, after having spent a number of years in prison, this morbid character is still more developed, in many cases to an appalling extent. In this last direction – the most dangerous of all – prison education is most effective.³⁵⁸

As an educating force, the state-engendered environment of the prison leads to an unsafe exaggeration of the passions. Such an intensification, however, is but one of the conditions of a criminally predisposed mental illness. If the individual’s will, the

³⁵⁵ Ibid., p. 336.

³⁵⁶ Kropotkin, *The Terror in Russia*, p. 305.

³⁵⁷ Kropotkin, *Memoirs*, p. 466.

³⁵⁸ Ibid., p. 467.

rational check on impulsive instincts and inclinations, remains intact and strong, then the descent into madness is prevented. Yet, worryingly for Kropotkin, this last medical barrier to criminal insanity is also affected in the prison, crushed under the weight of political incarceration:

Incarceration in a prison of necessity entirely destroys the energy of a man and annihilates his will. In prison life there is no room for exercising one's will; to possess one's own will in prison means surely to get into trouble. The will of the prisoner *must* be killed, and it is killed.³⁵⁹

This medical codification of madness was fundamental to Kropotkin's political critique of the state and his unmasking of its power. It was one of the crucial conceptual elements of contemporary scientific thought that he absorbed into his anarchist reading of prisons, and which supported his political statement that 'prisons are "universities of crime, maintained by the state"'.³⁶⁰

Kropotkin read the medical link between the will and the passions into the experiences of suffering. His recollection of an episode involving a fellow prisoner in the St. Peter and Paul fortress illustrates the way in which he conceived of an individual's fall into madness at the hands of the state:

Soon I began to notice, to my terror, that from time to time his mind wandered. Gradually his thoughts grew more and more confused, and we [...] perceived, step by step, day by day, evidences that his reason was failing, until his talk became at last that of a lunatic. Frightful noises and wild cries came next [...]; our neighbor was mad, but was still kept for several months in the casemate before he was removed to an asylum, from which he never emerged. To witness the destruction of a man's mind, under such conditions, was terrible.³⁶¹

Kropotkin's friend turned mad under certain politically imposed conditions. As the arbiter of those conditions, the state was to blame for the worsening and ruin of his mental health. His insanity developed as a consequence of confinement, an isolation that broke his reason and allowed his wild, beastly impulses to dominate his mind. The state damages, Kropotkin believed, irreversibly in this case, the delicate balance between man's reason and his nature which keeps his sanity intact. In contrast to Kropotkin's critiques of state punishment built on the calculations of statistical data, in

³⁵⁹ Ibid., p. 466.

³⁶⁰ Ibid., p. 468.

³⁶¹ Ibid., p. 360.

this example the individual story of the victim is in full view. Suffering is not hidden within an abstract representation of a complex reality. Thus, Kropotkin's biological reading of the threat of the state was able to incorporate both statistical and personal perspectives. He looked for signs of social illness in statistical tables and for signs of individual degeneracy in the destruction of a man's mind.

Like epidemics of typhus and scurvy, the lunacy engendered by the state, so closely linked to political deviancy, found its way out of the prison and jeopardised the sanity of society. Kropotkin condemned prisons as sources of a medically conceived moral contagion that led to social disorder outside their walls. 'Corruption of all sorts', he wrote, 'spreads like a blot of oil round every prison'.³⁶² Moral sickness seeps out of the prison and infects the life of the surrounding area. The state medically compromises public order by its tendency to induce criminal insanity both inside and outside the prison. Like Ferri, whose criminal statistics (as I mentioned in chapter two) tried to measure crime as a social phenomenon, Kropotkin saw crime as a 'Social Disease' damaging the health of the social body.³⁶³ He linked the apparent late nineteenth-century, European-wide epidemic of crime with the punitive politics of the state:

It is known in what threatening proportions crimes against decency are growing all over the Continent [...]. Many causes contribute towards this growth; but amidst these various causes one occupies a marked rank; the pestilential influence of our prisons.³⁶⁴

Kropotkin's idea of political power as pestilential was not an attempt to describe through metaphor the state's damaging relation to society. The notion that the state was the chief cause of all 'social ills' was made real by Kropotkin's anarchism. He chose the adjective 'pestilential' as a literal description of a quality specific to the state: its capacity to subject individuals and the social organism to the deteriorating influence of physical and psychological disorders.

³⁶² Ibid., p. 470.

³⁶³ Kropotkin, *Prisons*, p. 339.

³⁶⁴ Ibid., pp. 334-35.

Morality of the State

Through their attacks against the state anarchists claim to unmask its morality. In order to isolate a morality intrinsic to the notion of government and to show how it leads to corruption, Bakunin critiqued the theory of the social contract. He called it ‘a revolting nonsense! An absurd fiction, and what is more, a wicked fiction! An unworthy hoax!’:

From the point of view of the system which we are now examining the distinction between good and bad did not exist prior to the conclusion of the social contract. At that time every individual remained isolated in his liberty or in his absolute right, paying no attention to the freedom of others except in those cases wherein such attention was dictated by his weakness or his relative strength – in other words, by his own prudence and interest. At that time egoism, according to the same theory, was the supreme law.³⁶⁵

Bakunin contended that the hidden trick played by social contract theorists, like Hobbes, for example, lay in their claim that morality came into being with the establishment of a political state and political authority. He warned that their assumption about the isolated and egoistic existence of humans in a state of nature allows for the creation of a dangerous illusion: first, that society itself was the result of an artificial contractual binding, and second, that this enforced, intentional sociability made the emergence of morality possible.

Anarchism reveals a very different story about the emergence of the state and the fate of morality. Rather than signalling the birth of morality, the state leads to the death of an authentic human morality. According to Bakunin’s Rousseauian reading, society exists in the absence of the state. People are naturally egoistic, but not troglodytic. Their ‘ferocious egoism’ exists alongside a powerful ‘sociability’ that accommodates community.³⁶⁶ Within this environment, the conceptions of right and wrong, of good and bad, of justice, virtue, and respect are born.³⁶⁷ With the emergence of political power, however, humanity’s natural morality is corrupted. It is replaced by the interests of the state. These interests – territorial survival, enlargement, enrichment, strengthening, empowering, ordering, controlling – generate the moral code of the state that rules over or simply sweeps aside the original morality of humanity:

³⁶⁵ Mikhail Bakunin, *The Political Philosophy of Bakunin: Scientific Anarchism*, ed. by G. P. Maximov (London: The Free Press of Glencoe, 1953), p. 136.

³⁶⁶ *Ibid.*, p. 147.

³⁶⁷ *Ibid.*

To offend, oppress, rob, plunder, assassinate, or enslave one's fellow man is, to the ordinary morality of man, to commit a serious crime. In public life, on the contrary, from the point of view of patriotism, when it is done for the greater glory of the State in order to conserve or to enlarge its power, all that becomes a duty and a virtue.³⁶⁸

This act of displacement is a moment of nature's corruption. Not only is something natural suppressed, but the interests of the state become the basis of social morality. A façade of a morality is established, which underneath, however, lurks the valueless, cold rationale of state survival and perpetuation.

In *The General Idea of the Revolution in the Nineteenth Century* (1851), Proudhon claimed to have located the substance of a morality that derived its meaning from the interests of government:

To be GOVERNED is to be kept in sight, inspected, spied upon, directed, law-driven, numbered, enrolled, indoctrinated, preached at, controlled, estimated, valued, censured, commanded, by creatures who have neither the right, nor the wisdom, nor the virtue to do so... To be GOVERNED is to be at every operation, at every transaction, noted, registered, enrolled, taxed, stamped, measured, numbered, assessed, licensed, authorized, admonished, forbidden, reformed, corrected, punished. It is, under pretext of public utility, and in the name of the general interest, to be placed under contribution, trained, ransomed, exploited, monopolized, extorted, squeezed, mystified, robbed; then, at the slightest resistance, the first word of complaint, to be repressed, fined, despised, harassed, tracked, abused, clubbed, disarmed, choked, imprisoned, judged, condemned, shot, deported, sacrificed, sold, betrayed; and to crown all, mocked, ridiculed, outraged, dishonored. That is government; that is its justice; that is its morality.³⁶⁹

State morality corresponds with the interests of governmental power. Behind the smokescreen of 'general interest' lie the concerns of political government. The necessity for the state to regulate, control, measure, punish, dominate, and judge its population assumes the role of a morality in itself. Proudhon exposes this lie, however, and shows not only how state morality is outside of, but how it is inflicted upon society.

Because anarchists are interested in the experience of moral corruption under the state, their discussions of state morality revolve around insurmountable binaries: society/government; good/evil; human/mechanism; natural/artificial. These

³⁶⁸ Ibid., p. 136.

³⁶⁹ Proudhon, *The General Idea of the Revolution in the Nineteenth Century*, p. 294.

fundamental Manichean oppositions, as Newman describes them, however, merely serve to represent the political power with which society is confronted and to which it will inevitably succumb. State morality will dethrone the natural morality of humanity.³⁷⁰

Kropotkin continued this trend in nineteenth-century anarchist thought. He believed that the state, through the perusal of its narrow interests, establishes a moral code that perverts human morality. Because of his Lamarckian view of adaptation it could not be otherwise. In *Ethics: Origin and Development* (1922), he summed up his position: ‘the ethics of every society will reflect the established forms of its social life.’³⁷¹ In the form of the state, society and its morality come to reflect, by way of a biological adaptation to surroundings, its anti-social, selfish, and duplicitous character.

The indoctrination of humanity with the moral norms of state existence, however, made sense to Kropotkin as a medical matter. As I argued in chapter one, his medical understanding of morality framed the corruption of humankind as a worsening of a moral condition. Moreover, this deterioration could be proven and explained by psychological knowledge. When he warned that the state has a ‘pestilential influence on public morality’,³⁷² he was again speaking literally. Moral health is sickened when it is squeezed into centralised and authoritative environments.

Kropotkin tried to build a case against the state’s moral corruption of society through the language of medical moral science. He began with humanity’s a priori moral health outside of the state. People are morally ‘sane’ with an intact and fully functioning moral sense. This stands in contrast to the psychiatric, abnormal condition of moral insanity I described in chapter one, where the moral sense is absent in an individual. They have sound mental disposition that enables them to recognise distinctions between moral and immoral, sociable and anti-social. In *In Russian and French Prisons*, Kropotkin alludes to this healthy psychological state:

If we analyze ourselves, if everybody would frankly acknowledge the thoughts which have sometimes passed through his mind, we should see that all of us have had – be it as an imperceptible wave traversing the brain, like a flash of light – some feelings and thoughts such as constitute the motive of all acts considered as criminal. We have repudiated them at once.³⁷³

³⁷⁰ Newman, *From Bakunin to Lacan*, p. 39.

³⁷¹ Kropotkin, *Ethics*, p. 316.

³⁷² Kropotkin, ‘The Inevitability of Revolution’, p. 33.

³⁷³ Kropotkin, *Prisons*, p. 352.

There are two important qualities to this state of moral health. First, it is normal for people to experience imperceptible flashes of criminality. This is a psychological phenomenon: it is experienced in feelings, thoughts, and takes place across the brain. Kropotkin speaks of *all* acts considered criminal, referring not only to behaviour such as theft which could be argued is meaningful only in societies based on property and private ownership, but to more universally, non time-space-dependent crimes such as violence, sexual assault, and murder. Second, it is normal for people to withstand and immediately repudiate these impulses. What Bakunin termed in the passage above the ‘ordinary morality of man’, was for Kropotkin a medically conceived, psychiatrically explained condition of mental health characterised by the capacity to prevent the fruition of a criminal potentiality.

Kropotkin’s understanding of how this medicalised conception of moral health is sickened led to his theory of state morality. All psychologically healthy humans experience flickers of criminal thought, ‘but they lead to anti-social deeds only under certain unfavourable circumstances’.³⁷⁴ This is Kropotkin’s play on the criminological notion of criminal predisposition. Ferri’s ideas on this subject were important. Shifting the Lombrosian notion of predetermined criminality to a more environmentally concerned view of criminal predisposition, Ferri argued for the circumstantial power of pathology over the individual’s moral faculty. He emphasised that his criminology ‘consisted in asserting, not the fatality of predestination of human actions, including crimes, but only their necessary dependence upon their natural causes’.³⁷⁵ A person’s psychological propensity to commit crime must be brought to life by their surroundings before they could become a criminal. Crime was the result of a meeting between body and environment, ‘a product of a particular organic and physical constitution, acting in a particular physical and social environment’.³⁷⁶

Kropotkin absorbed these kinds of ideas and built them into a political argument. That the environment somehow fertilises and incubates the psychological causes of crime seemed politically significant. Speaking of the normal, harmless flashes of criminality people experience in good moral health, Kropotkin goes on to say: ‘But if they had had the opportunity of recurring again and again; if they were nurtured by circumstances [...] then these passing influences, so brief that we hardly

³⁷⁴ Ibid., p. 357.

³⁷⁵ Ferri, ‘The Data of Criminal Statistics’, p. 298.

³⁷⁶ Ibid., pp. 330-36 (p. 331).

noticed them, would have degenerated into some morbid element in our character'.³⁷⁷ Being responsible for the socio-economic and political circumstances in which people live, the state could be blamed for the fertile ground in which imperceptible criminal thoughts become diseased and degenerate. As an environment, therefore, the state sickens the healthy morality of humanity. Moreover, having engendered cases of mental pathology, the state punishes its sufferers. Far from a cure, this practice strengthens the hold of the disease over its victims. 'Prisons', he argued, 'do not cure [...] pathological deformities, they only reinforce them'.³⁷⁸ Though conceptually far removed, Kropotkin is reiterating Bakunin's critique of the social contract. The state does not bring morality into existence, but obliterates it. Kropotkin's political critique, however, is based on a medical interpretation of this moral displacement. By weakening humanity's sanity and making people susceptible to psychopathy, the state cultivates morally sick populations whose psychiatric conditions (moral insanity, for example) are characterised by the complete absence of a person's ability to determine right from wrong.

Kropotkin's reading of the state's psychological threat to humanity does not rely on the traditional anarchist binaries that Newman puts forward to define anarchism. As a medical phenomenon, Kropotkin's conception of morality does not fit into frameworks of good/bad or natural/artificial. Binary oppositions, however, are still useful for Kropotkin. Yet, the confrontations in his thought rely on scientific ideas prevalent to the age in which he lived: healthy/sick, sane/insane, normal/pathological. The fact that fundamental, insurmountable oppositions between desirable and undesirable states run through Kropotkin's moral thinking is an important signifier of his anarchism. That these binaries are medical, however, shows his departure from an anarchist tradition of political thought that relied on Manichean oppositions, and the emergence of a new, bio-political anarchism that relied on medical knowledge to confront the state.

³⁷⁷ Kropotkin, *Prisons*, pp. 352-53.

³⁷⁸ *Ibid.*, p. 357.

Wild Beasts of Battle

Anarchists have interpreted the spaces of warfare as sites in which to uncover the threat posed by the modern state. Within the context of war, anarchists argue, the state betrays its destructive relation to society. Horror at the devastating power of politics is another defining feature of Miller's definition of anarchist anti-statism. He argues that the state's tendency to destroy human life is central to anarchism's critique of centralised political authority: 'The state is a *destructive* agency which enlists its subjects to fight wars whose only cause is the protection or aggrandizement of the state itself – all anarchists believe that, without the state, there might be small-scale conflicts, but nothing to resemble the horror and devastation of modern warfare'.³⁷⁹ Warfare interests anarchist writers because the experiences of conflict – pain, desolation, destruction, death, subjection to hierarchical domination, sacrificing liberty to an alien cause – appear to them to be representative of the ways in which society experiences life under states more generally.

Before the emergence of the highly mechanised forms of battle associated with the European wars of the twentieth century, anarchists in the nineteenth century critiqued the militaristic aggression of states. In the wake of the Franco-Prussian War (1870-1871), Bakunin wrote about the logic and effects of war:

Henceforth every State, in so far as it wants to live not only on paper and not merely by sufferance of its neighbors, but to enjoy real independence – inevitably must become a conquering State. But to be a conquering State means to be forced to hold in subjection many millions of alien people. And this requires the development of a huge military force. And where military force prevails, there freedom has to take its leave.³⁸⁰

In order to survive, Bakunin argued, states need to exert their destructive power over millions of people. The will to perpetuate their existence requires the subjection of neighbouring populations. Moreover, for Bakunin, warfare has particular political consequences that exemplify the dangers of state power. The effect of the state's destructive ambition is political: the disappearance of freedom.

The First World War provoked an intensification of the anarchist critique of the state's destructive relationship to humanity. Anarchists responded to the new

³⁷⁹ Miller, *Anarchism*, p. 7.

³⁸⁰ Bakunin, *Scientific Anarchism*, pp. 211-12.

dimensions of an industrialised conflict: the unprecedented carnage of total war, highly technologised military machinery unleashed upon vulnerable, helpless victims, and ever more efficient and rational ways of killing en masse. The effects of the state's new, formidable destructive power, anarchists believed, could not be condemned in purely political terms – in the disappearance of freedom – but in the physical annihilation of bodies and populations. Published in 1915, the 'International Anarchist Manifesto Against War', whose contributors included Errico Malatesta (1853-1932), Alexandr Berkman (1870-1936), and Emma Goldman (1869-1940), focused on the 'massacre' caused by war. 'Governments', the manifesto stated, 'seek to throw fresh peoples into the fiery furnace of war'.³⁸¹ Society was obliterated in the wake of an industrialised, furnace-driven state war machine. Later the same year, Goldman reiterated this analysis of the state's destructive power. In 'Preparedness: The Road to Universal Slaughter' (1915), she pointed to 'the highly developed instruments of murder' now available to the industrialised state in its quest for survival. The effect of these modern technologies of warfare, she argued, was 'to unloosen the furies of death over land and sea'.³⁸² In the context of war, Goldman conceived of the state's threat as the infliction of widespread death. The power of the state could be seen in the visible signs of destruction it inflicted during times of war.

Kropotkin also wrote about warfare as the manifestation of state power and he attacked the state with the same ideas used by many of his anarchist contemporaries. Roughly a year before the beginning of the First World War, his article 'Modern Wars and Capitalism' (1913) set out his own condemnation of the state's destructive relationship to society in the context of war. Although he would later receive strong criticism from large sections of the European anarchist movement for announcing his support for the allied powers, in particular from Malatesta, his stance against state warfare in 1913 shares similar concerns with those later put forward by his fellow anarchists.³⁸³ Kropotkin highlighted the precision of modern warfare and the state's

³⁸¹ Alexandr Berkman, Emma Goldman, Errico Malatesta, et al, 'International Anarchist Manifesto Against War' [1915], in *Anarchism*, pp. 289-91 (pp. 290-91).

³⁸² Emma Goldman, 'Preparedness: The Road to Universal Slaughter' [1915], in *Anarchism*, pp. 291-94 (p. 293).

³⁸³ Soon after the outbreak of the First World War Kropotkin made his position clear. The conflict appeared to him as a war of defence in which the revolutionary heritage and vitality of France was under attack from the prototypical state aggressor, Germany. Malatesta led the anarchist anti-war response to Kropotkin's position. The arguments of both thinkers were published in *Freedom* during the time of the war, including Malatesta, 'Anarchist Have Forgotten Their Principles' [1914], in *Anarchism*, pp. 286-

newfound capacity to manipulate industrialised weaponry: ‘The ravages caused by shells, thrown with accuracy of aim at a distance of three or four, or five miles, by batteries the position of which cannot be made out, as they use smokeless powder, are unimaginable. The guns are not fired haphazard anymore’.³⁸⁴ Like other anarchist critiques, Kropotkin argued that this new rationality and exactness of warfare led to an unprecedented destruction of physical life: ‘Who will ever tell of the sufferings of millions of men, women, and children, of broken lives during the crisis, while immense fortunes were being made in anticipation of mangled flesh, and the piles of human corpses about to be heaped up’.³⁸⁵ The victims of modern warfare – mangled, deformed, unrecognisably blown apart – became the visible sites on which the destructive power of the modern state was visited. Inter-state conflict, in pursuit of increased territory, wealth, and control, cared nothing for human cost.

Alongside the conventional anarchist critique, however, Kropotkin’s article develops a further argument against the state’s destructive power. His article goes well beyond outrage at the images and quantities of physiological damage and considers the psychological and degenerate effects of modern warfare. The battlefield, in particular, is taken as a space in which to explain how the power of state environments function and how they damage human health.

Kropotkin had begun to think of battlefields in these terms before writing ‘Modern Wars and Capitalism’. In *Mutual Aid*, he stated that ‘men are maddened in the battlefield’.³⁸⁶ As we have seen from Kropotkin’s faith in psychiatry, he would not have used this as a mere turn of phrase, but as a literal statement about a factual change in psychological condition.³⁸⁷ A central claim in Kropotkin’s political argument against the state’s destructive power, therefore, was that the experience of battle

89. For more on Kropotkin’s polemic with Malatesta and his position on the war, see Miller, *Kropotkin*, pp. 225-32.

³⁸⁴ Petr Kropotkin, *Wars and Capitalism* (London: Freedom Press, 1914), p. 14. Originally appeared in *Freedom* as ‘Modern Wars and Capitalism’ (1913).

³⁸⁵ *Ibid.*, p. 17.

³⁸⁶ Kropotkin, *Mutual Aid*, p. 234.

³⁸⁷ Though commonly associated with the First World War and so-called ‘shell shock’, the apparent connection between modern warfare and psychiatric illness had been widely explored by British medical science during the nineteenth century. Scientific investigations of psychological and neurological conditions, as well as their institutional treatment, had arisen in the context of the Crimean War (1853-1856), the American Civil War (1861-1865), the Boer Wars (1880-1881 and 1899-1902), the Russo-Japanese War (1904-1905), and the Balkan Wars (1913-1914). Kropotkin’s opinion that ‘men are maddened in the battlefield’, therefore, reflects an already well-established nineteenth-century scientific assumption about the psychologically damaging effects of warfare. See Edgar Jones and Simon Wessely, *Shell Shock to PTSD: Military Psychiatry from 1900 to the Gulf War* (Hove and New York: Psychology Press, 2005), pp. 1-19.

produces a deviation from a normal condition of mental health to a sickened state of madness. The insanity of soldiers, a medical illness developed by exposure to a state-engendered environment, was a form of regression taking place within the organism.

In ‘Modern Wars and Capitalism’, Kropotkin developed this political critique, considering the degenerate character of the madness caused by battle. While he thought that by causing insanity the state was producing a specific form of degeneration of human beings – a psychological abnormality – Kropotkin also considered the degenerate influence of the battlefield in broader terms. He wanted to show that the state was responsible for staving off biological progress and causing forms of regression, that it was guilty of plunging people back into ‘the most barbarous aspects of olden days’.³⁸⁸ As organisms adapting to environments, soldiers were getting biologically worse, not better. It was in this sense that Kropotkin argued that on the battlefield soldiers experience a ‘terrible return to the most atrocious savagery’.³⁸⁹ The destructive effects of state power, administered through the political conditions of the battlefield, produced an organic fall in humanity.³⁹⁰

Kropotkin’s critique of state warfare drew on a prevalent theme within contemporary ideas of degeneration. The image of a ‘tamed’ humanity, precariously situated on the precipice of a Hobbesian state of nature and struggling to suppress a sleeping barbarity endemic to modern civilisation, haunted many political and historical works of the period. In his psychological histories of France, for example, Hippolyte Taine (1828-1893) emphasised the delicate relation of modern man to its barbarous past:

Man is an animal by nature and by structure, and neither nature nor structure ever lose a single fold. He has the canine teeth like the dog and the fox, and, like the dog and the fox, he once fastened them in the flesh of his own kind; his descendants cut each other’s throats with stone hatchets [...]. Even now he is not changed; he is only softened.³⁹¹

³⁸⁸ Kropotkin, *Wars and Capitalism*, p. 15.

³⁸⁹ Ibid.

³⁹⁰ Elsewhere Kropotkin associated the state with decline. In the conclusion of *Mutual Aid*, he blames political events – ‘state periods of history’ – for the decline of the ‘loftier’ forms of art, knowledge, science, industry, and intelligence that had emerged in ancient Greece and medieval Europe. This erosion, or ‘decay’ of civilisation, however, is not conceived in biological terms in the same way as the critique of warfare that I outline in the text, but as a form of civilisational decadence. *Mutual Aid*, pp. 248-49.

³⁹¹ Hippolyte Taine, *Notes on Paris* [1867], trans. by John Austin Stevens (New York: Henry Holt and Co., 1875), p. 280.

In seemingly opening up the possibility for humanity to look back on itself, an opportunity that stimulated both excitement and fear, evolution provided Taine with a scientifically validated warning about the depths to which society could fall in the event of civilisational collapse. Although modernity has tamed man, has silenced the shrieks of his latent wildness, and subdued the convulsions of his violent instincts, his nature still lurks dormant underneath.

The possibility for civilisation to crumble and for humanity to return to a barbaric nature was a key trope in talking about war in this period, particularly the First World War. The fears that Taine expressed about the resurrection of humanity's violent wildness were mapped onto interpretations of battle. This idea did not only frame anxieties about modern warfare, however, but was used by contemporaries to articulate why they supported technologised European conflict. By literally and symbolically blowing apart European society, industrialised war was seen to cut through the crust of culture, removing the mask of civilisation from the primitive face of human beings. Italian futurist Filippo Tommaso Marinetti (1876-1944), for example, thought of warfare as a hygiene that would cleanse modern Italy of its 'need for restricted order, for laws, chains, obstacles, for police stations, for morality, for chastity; fear of unrestricted freedom'.³⁹² His widely read 'The Futurist Manifesto' (1909) described war as 'the Sole Cleanser of the World', a regenerative force able to wash away modernity's 'cowardly quietism'.³⁹³ Ernst Jünger (1895-1998) gloried the First World War for what he saw as a vital resurgence of human instinct. War had liberated our true nature from the regularised confines of mechanised, urban existence. The 'animal in man', he argued, 'who slumbers on the comfortable, woven carpets of a polished, honed, and silently intricate civilization', is awakened and set free on the battlefield.³⁹⁴ In warfare, a human being's 'life reverts to its primal functions, [and] his blood, which up until then has flowed coolly and regularly through his veins in the mechanistic activity of his stony, urban skeleton, foams up'.³⁹⁵ From this perspective, the destruction of battle was necessary for the revelation of life. War lifted the veil from modern man.

³⁹² F. T. Marinetti, *Critical Writings*, ed. by Günter Berghaus, trans. by Doug Thompson (New York: Farrar, Straus and Giroux, 2006), p. 53.

³⁹³ *Ibid.*

³⁹⁴ Ernst Jünger, *Der Kampf als inneres Erlebnis* [1926], quoted in Tim Beasley-Murray, *Mikhail Bakhtin and Walter Benjamin: Experience and Form* (Basingstoke and New York: Palgrave Macmillan, 2007), p. 56.

³⁹⁵ *Ibid.*

Kropotkin's anarchist critique of the state constitutes part of this discourse. Like Marinetti and Jünger, Kropotkin made sense of modern warfare with reference to humanity's potential beastliness and animalistic nature. For Kropotkin, however, this trope did not represent the positive vitality of war, but its tendency to induce in human beings a biological regression. He looked to the Russo-Japanese War (1904-1905) to make this regressive process visible.³⁹⁶ It was on the battlefields of this war where the life of men was reduced to brutal instincts and blood lust:

After having hurled hand-grenades and pieces of pyroxyline at one another (two pieces of pyroxyline tied together with a string were used by the Japanese as a sling), Russian and Japanese soldiers rolled in the trenches of Port Arthur like wild beasts, striking each other with the butt-end of their rifles and with their knives, and tearing each other's flesh with their teeth.³⁹⁷

Kropotkin's wild beasts of battle, becoming not men but mere monsters, share similar beastly qualities to those depicted by Taine. Their wildness is signified by their carnivorousness. Both thinkers sink human teeth into human flesh. Although, for Kropotkin, this is not a return to an original state, a violent state of nature that lurks below the safety net of civilisation, it is nonetheless a regression, an evolutionary deviation from a possible path of progress. The French historian, whose radical conservatism he publicly criticised four years earlier in *The Great French Revolution 1789-1793* (1909), exhibited a deep-seated pessimism about biological degeneration with which Kropotkin sympathised. Unlike Taine, however, Kropotkin's images of degeneracy function to condemn the political order of the modern state. Bestiality is not intrinsic to nature, but to state civilisation. His critique of war accuses the state of stimulating a deviation from a better condition to a state of 'wildness'.

In 'Modern Wars and Capitalism', then, Kropotkin employed popular tropes and images of degeneration to warn Britain of the horrors of trench warfare. By looking to the Russian experience, one that would come to be seen as a precursor to the trench warfare of the First World War, he felt he could shed light on the damage

³⁹⁶ The Russian state did much to scientifically 'identify' and 'treat' the psychiatric damage caused by the Russo-Japanese War on the mental condition of its armed forces. Numerous psychopathological disorders were examined at Harbin Central Psychiatric Hospital as well as at hospitals in Moscow. Some of these conditions, 'Degenerative psychoses', for example, assumed the perceived connection between mental illness and degeneracy, a link Kropotkin would explore in reference to the Russo-Japanese War in 'Modern Wars and Capitalism'. See Paul Wanke, *Russian/Soviet Military Psychiatry, 1904-1945* (London and New York: Frank Cass, 2005), pp. 17-29.

³⁹⁷ Kropotkin, *Wars and Capitalism*, pp. 14-15.

caused by this new form of battle. Of course, there would be unprecedented annihilation and carnage. Yet, trench warfare would also significantly affect the human condition itself. It would cause soldiers to become animalistic and primal, to adapt to conditions that would turn them into beasts. Kropotkin illustrated the state's threat to society in terms that are not conventionally political or limited by a concern with the physicality of destruction. He condemned the state for perpetrating a far subtler, though no less damaging form of destruction. By subjecting individuals to the battlefields of war, the state damages their mental health and stimulates their biological regression.

5 Capitalism and the Bourgeoisie

*In considering the methods of production and exchange, as they have been organized by the bourgeoisie, we found a situation of irremediable decay.*³⁹⁸

Petr Kropotkin, 'The Coming Revolution' (1880).

In 'The Coming Revolution', Kropotkin surveyed the economic organisation of Europe. In order to show that the present state of the world was coming to an end and giving way to a new set of socio-economic conditions, he needed to provide a forceful and persuasive critique of the state's economic system: capitalism. 'The Coming Revolution' develops an argument against capitalism that pointed to the signs of its impending death. For Kropotkin, capitalism had undergone a severe deterioration that, by the late nineteenth century, had rendered it unsalvageable. At the heart of Kropotkin's critique of the capitalist system, therefore, was a warning about its 'decay and decomposition'.³⁹⁹ Capitalism's most distinctive feature was its irreversible decline.

In 'Revolution and Famine' (1887), Kropotkin likened capitalism's decline to the unfolding of a tragic drama:

The situation is such that any disturbance anywhere in Europe suddenly affecting trade may result in such a terrible crisis as we have never seen before. So, there is no use in saying, "We don't want to bring things to a crisis." The crisis has already begun independently of our will. The system that has grown up under middle-class rule is already crumbling to pieces. The fifth act of the drama is already on the stage.⁴⁰⁰

Played out on the stage in full view of all, capitalism's downfall seems pre-ordained and sewn together by the intricate actions of middle-class actors. Kropotkin watches this unfolding like the audience watches the performance; his revolutionary foresight

³⁹⁸ Petr Kropotkin, 'The Coming Revolution' in *Words of a Rebel*, pp. 34-38 (p. 34). Originally appeared in *Le Révolté* as 'La Prochaine Révolution' (1880).

³⁹⁹ *Ibid.*, p. 35.

⁴⁰⁰ Petr Kropotkin, 'Revolution and Famine' [1887], in *Act For Yourself*, pp. 66-70 (p. 67). Originally appeared in *Freedom*.

lets him know the end is near. With a sense of catharsis he understands the series of causes and effects which have led to the terrible moments preceding the end.

Society was part of this tragic drama. Like the inhabitant of a crumbling building, it was plunged into a passage of critical time. In 'To the Young', Kropotkin passed from an image of the decline of the edifice of capitalism to one of the demise of the human beings inhabiting the system: 'One day the crash will come, a crisis that is no longer temporary like those in the past, but one that will kill off industries, that will reduce to poverty thousands of workers and decimate their families.'⁴⁰¹ Capitalism's demise meant that it was unfit as a method of production and exchange capable of satisfying the biological needs of society. Physiologically, nutritionally, and medically, the collapse of capitalism poses an existential threat to society. Knowing that 'the crash will come', but unsure of when, society stood precariously on the brink of biological disaster. In this position of insecurity, human beings feel the agony of capitalism's painful death in their own bodies. It was not the decay and decomposition of the capitalist system that was Kropotkin's primary concern, but the decay and decomposition of human bodies that was occurring as a result.

The Environments of Capitalism

Anarchists tend to explore the environments of capitalism – the factory, mine, industrial complex, even the capitalist city itself – as the physical realities of an economic system upheld by the modern state. While to the state-centric worldview of many nineteenth-century anarchists, capitalism appeared as an epiphenomenal evil, an unfair organisation maintained by political authority, the conditions of existence it establishes are considered no less abhorrent and received substantial criticism. As a derivative of the state, the capitalist world made sense to the anarchist outlook that saw abstract, alienating, and artificial structures looming over and dominating human life. Centres of commerce, directed towards to the single aim of procuring wealth and capital, anarchists argued, were disconnected from the real life of the people and failed to meet the needs of society as a whole. The colossal nature of European industrial expansion in the nineteenth century provoked anarchist fears about the end of

⁴⁰¹ Kropotkin, 'To the Young', p. 60.

communality: the new towering and oppressive urbanity seemed to atomise society, devour local industry and trade, and destroy the natural bonds connecting individuals at a grass-root level.

Thus, Bakunin condemned the relationships established by the prevailing industrial and economic mode of organisation:

Let us even suppose, as it is being maintained by the bourgeois economists, – and with them by all the lawyers, all the worshippers of and believers in the juridical right, by all the priests of the civil and criminal code – let us suppose that this economic relationship between the exploiter and the exploited is altogether legitimate, that it is the inevitable consequence, the product, of an eternal, indestructible social law – and still it will always remain true that exploitation precludes brotherhood and equality for the exploited.⁴⁰²

Bakunin critiqued the capitalist environment as one characterised by relationships of inequality and personal distance. It positions people towards one another in a way that excludes the possibility of interaction outside the context of economic transaction. Whether artificial or natural, he argued, capitalism is a setting conducive to imbalance between members of society.

Kropotkin devoted much of his writing to condemning the exploitation which anarchists see as intrinsic to capitalism.⁴⁰³ The thrust of the attack, however, once again stemmed from his biological perspective of reality which I outlined in chapter one. His critique of capitalism, therefore, built on and was understood as a necessary accompaniment to his bio-political critique of the state. Relations of inequality certainly roused Kropotkin's anger and moral outrage, but the fate of social health was his primary concern. In 'The Spirit of Revolt' (1881), he articulated this view:

In epochs set on an unbridled course of self-enrichment, of feverish speculations and crises, of the sudden ruin of great industries and the brief flourishing of other branches of production, of scandalous fortunes amassed in a few years and dissipated as quickly, one soon realizes that the economic institutions which preside over production and exchange are far from giving society the good health they were supposed to guarantee it; they lead precisely to a contrary result.⁴⁰⁴

⁴⁰² Bakunin, *Scientific Anarchism*, p. 183.

⁴⁰³ On Kropotkin's arguments against capitalist exploitation, see Ruth Kinna, 'Fields of Vision: Kropotkin and Revolutionary Change', *SubStance*, 2, 36 (2007), 67-86.

⁴⁰⁴ Petr Kropotkin, 'The Spirit of Revolt', in *Words of a Rebel*, pp. 183-99 (p. 184). Originally appeared in *Le Révolté* as 'L'Esprit de révolte' (1881).

Capitalism afflicted humanity not simply by precluding equality and brotherhood, as Bakunin had argued, but by preventing good health. As a system, its shortcomings are judged in terms of their biological effects: Kropotkin realised that, in sum, the risk, disposability, inequality, and greed of capitalism are reproachable for guaranteeing society its sickness. This chapter will explore this idea, revealing in Kropotkin's writings on living and working environments his biological conception of capitalism's danger. Indeed, he explored these settings at length in order to expose the effects of capitalism on the human body. He needed to show the processes of decay that were taking place in the dwellings of the working class, in the factories and other sites of work.

When Kropotkin wrote about the concept of the modern city, or when he considered particular cities of Europe or Russia, he tried to show that it was an environment reflective of the capitalist system. This was not an expression of anti-urbanism, but of his view that the modern city was the site in which the realities of capitalism cause most harm to humanity. For Kropotkin, the spaces of capitalist production, the slums of the producing classes, and the sharp disparity between rich and poor were not features intrinsic to the city, but characteristics of its capitalist incarnation. It was important for him to draw connections between conditions created by capitalism and bodily suffering. In 'The Situation Today' (1879), Kropotkin tried to show the relationship between capitalist production in the city and biological decline:

Great industries are allowed to die, great cities like Sheffield are turned into deserts. There is poverty in England, above all in England, for it is there that the "economists" have most thoroughly applied their principles, but there is also poverty in Alsace and hunger in Spain and Italy. Unemployment exists everywhere, and with unemployment, mere lack becomes real poverty; anaemic children and women ageing five years in a single winter; sickness moving with great sweeps through the ranks of the workers! This is what we have attained under the rule of the capitalists.⁴⁰⁵

All over Europe capitalism is pushing the health of humanity to breaking point. As the physical environment of the economic system, the city accommodates the dismal plight of working class bodies. The crisis of capitalism and its immanent industrial collapse leads to mass unemployment across Europe, and in turn, as Kropotkin argues,

⁴⁰⁵ Petr Kropotkin, 'The Situation Today', in *Words of a Rebel*, pp. 19-23 (pp. 21-22). Originally appeared in *Le Révolté* as 'La Situation' (1879).

the unemployed fall into sickness. Working class women are representative of the processes of accelerated organic deterioration; their children lack the vibrancy of new life and are instead pale with illness. In declaring that society has reached this state of being through capitalist rule, Kropotkin is making his basic and essential point about capitalism: it is an unjust model of socio-economic organisation, whose most severe threat to workers lies not in exploitation and alienation, but in the weakening and destruction of their health.

Sickness is commonplace in Kropotkin's depictions of cities and is one of their defining features. Again, this ever-present biological danger is not unique to the urban environment as such, but to urban centres of capitalist production and social relations. It is in these conditions that the unhygienic and cramped surroundings of the urban working class prevail, environmental results of the inequality produced by capitalism. In Kropotkin's cities life is accommodated in 'squalid'⁴⁰⁶ and 'crowded slums'.⁴⁰⁷ places where the risk of infection from filth and dirt is heightened, and where the chance of contagion is intensified by the close proximity of living organisms.

Kropotkin assessed the plight of working class people in the squalor of the crowded slums of the capitalist city. His writings depict the sights and sounds of the sufferings of sick bodies that are exploited by capitalism and they focus on the conditions of their dwelling that might be conducive to disease. In 'To the Young', Kropotkin encouraged his readers to analyse a typical working class living environment from a medical point of view:

Let us suppose you are about to become a doctor. Tomorrow, a man in a worker's blouse will call you to visit a sick person. He will lead you into one of those alleys where neighbours can almost shake hands over the heads of the passers-by; you will climb in foetid air and by the shivering light of a lantern up two, three, four or five flights of stairs covered in slippery filth, and in a dark, cold room you will find the invalid, lying on a straw pallet and covered in dirty rags. Pale, anaemic children, shivering under their tatters, look at you through great, wide-open eyes.⁴⁰⁸

From Kropotkin's bio-political perspective, the expertise of the doctor has valuable political dimensions. Only his authority can provide an insight into how capitalism endangers human beings. His medical knowledge exposes not exploitation, but the

⁴⁰⁶ Kropotkin, *The Conquest of Bread*, p. 76.

⁴⁰⁷ *Ibid.*, p. 81.

⁴⁰⁸ Kropotkin, 'To the Young', p. 45.

biological effects of the economic system of the modern state – a woman with tuberculosis, fevered children, a dying laundress. By establishing a doctor's perspective in his political writings, Kropotkin can centre his critique of capitalism on the details of working class living conditions that affect human bodies: lack of light, poor quality of air, overcrowding, dirty staircases, minimal if non-existent levels of hygiene. Capitalism, in plunging workers into poverty through exploitative and low-paid work, sinks them to a level where their bodily health is ruined.

At first sight, this particular passage in 'To the Young' appears to confirm the essence of Kropotkin's attack against capitalism: the fundamental effect of the system is to worsen the health of the working classes. This would suggest that the bourgeoisie experiences its privileged economic and social position in good health. But Kropotkin's argument does not follow a logic that says 'capitalism makes workers sick while the bourgeoisie remains healthy'. He continued to ask the reader to adopt the doctor's point of view, but this time upon visiting a lady in a mansion:

Next day you are still thinking about those inhabitants of the slums, when your colleague tells you that a footman came to fetch him in a coach. It was for one of the inhabitants of a rich mansion, a woman, exhausted by sleepless nights, who gives all her life to her boudoir, to paying visits, to balls and to quarrels with her boorish husband. Your colleague has prescribed for her a less frivolous way of life, a less rich diet, walks in the open air, calm of mind and some exercises at home which might partly make up for the lack of productive work!⁴⁰⁹

Kropotkin's criticism of capitalism transcends class boundaries and considers its relation to the whole of humanity. It is biologically damaging to all individuals regardless of their position in the productive process. The only difference is the cause of illness: 'One woman is dying because, all her life, she has never eaten or rested enough; the other is wilting because all her life she has never known what work is.'⁴¹⁰ Both causes are rooted in the socio-economic system to which their bodies are inextricably bound. Capitalism makes everyone sick.

Alongside dwelling conditions, Kropotkin looked to sites of work to find the damaging effects produced by capitalism. This was nothing new in the anarchist assessment of work. Anarchism has traditionally provided critiques of the spaces of

⁴⁰⁹ Ibid., p. 46.

⁴¹⁰ Ibid.

production in society as they are directed by, and towards the interests of capital gain. Proudhon explored the emerging role of the mechanised workshop as follows:

With machinery and the workshop, divine right – that is, the principles of authority – makes its entrance into political economy. Capital, mastership, privilege, monopoly, Loaning, Credit, Property, etc. – such are, in economic language, the various names for I know not what, but which is otherwise called Power, Authority, Sovereignty, Written Law, Revelation, God in short, cause and principle of all our miseries and all our crimes, and who, the more we try to define him, the more he eludes us.⁴¹¹

Proudhon articulated his hostility to the perverting values of government through a commentary on mechanised industrialisation. The capitalist workshop served as a site in which to expose the political domination of states and the moral perversion of religion, law, and the idea of God. The capitalist workshop and its machinery physically embodied the external authority of the state and church.

The fear of political domination and authority penetrating society through the workplace was felt by later anarchists who continued to associate oppression with industrial work. Reclus attacked the governmental principle of force through an assault on late nineteenth-century industrial progress, mimicking its claims to power and control: ‘Yes, it is force which reigns! proclaims modern industry louder and louder in its brutal perfection.’⁴¹² Goldman carried Proudhon’s anxieties into the twentieth century, arguing that capitalism gives the modern state the means to exercise its power, that is ‘the power to subdue, to crush, to exploit, the power to enslave, to outrage, to degrade’.⁴¹³

Goldman’s argument that the problem of capitalism lies in the authoritarian nature of the workplace and the dominating tendencies of modern machinery is present in Kropotkin’s writings. In *Fields, Factories and Workshops*, a book which deals at length with sites of work under capitalism, he characterises the factories and workshops of late Victorian Britain as places of ‘industrial hell’.⁴¹⁴ But what makes them so unbearable for those who work there? Unlike Proudhon, Reclus, and Goldman, it is not in the subjection to authority and the subservient recoil in the face

⁴¹¹ Pierre-Joseph Proudhon, *The System of Economic Contradictions, or, The Philosophy of Poverty* [1846], in *Anarchism*, pp. 38-42 (p. 40).

⁴¹² Élisée Reclus, ‘Evolution and Revolution’ [1891], in *Anarchism*, pp. 268-71 (p. 270).

⁴¹³ Emma Goldman, ‘Anarchism: What It Really Stands For’ [1910], in Emma Goldman, *Anarchism and Other Essays* (New York: Dover Publications, 1969), pp. 47-67 (pp. 53-54).

⁴¹⁴ Kropotkin, *Fields, Factories and Workshops*, p. 218.

of mechanic domination. What Kropotkin objected to most of all is the fact that capitalist factories are not ‘airy and hygienic’.⁴¹⁵ He feared for the physical health of the men, women, and children who toil to produce the wealth of the capitalist. Even the effects of large-scale machinery, considered by Proudhon to be the embodiment of political power, appeared to Kropotkin to take place in the physical constitution of the worker. In *The Conquest of Bread*, he wrote that ‘when a man is harnessed to a machine, his health is soon undermined’.⁴¹⁶ The problem here is not the worker’s immobility or that he is bound to an inanimate object, but that his health deteriorates.

Kropotkin treated factories and workshops as environments, whose poor hygienic conditions worsen the condition of the organisms inside. Thus, his consideration of young girls in the British manufacturing industry: ‘From the age of thirteen we compel the girl – a child yet – to work as a “woman” at the weaving-loom, or to stew in the poisoned, over-heated air of a cotton-dressing factory, or, perhaps, to be poisoned in the death chambers of a Staffordshire pottery.’⁴¹⁷ Capitalist enterprise subjects human beings to toxic surroundings. Later, in *Ethics*, Kropotkin refers again to the destructive inner world of the factory in which the ‘poisoning of adults and children by noxious gases’ is a daily occurrence in their biological experience of capitalism.⁴¹⁸ As a system reliant on environments of exploitation, capitalism literally poisons.

Descriptions of the effects of capitalist sites of work are a theme of ‘To the Young’. Kropotkin assessed the damage caused by the building of the privately financed Swiss trans-alpine Gotthard Railway that began in 1872:

Once you have reached the site of this work, you will see whole battalions of workers decimated by exhaustion and sickness in the building of a single tunnel, you will see thousands of others going home with a few dollars and the unmistakable signs of consumption, you will see human corpses.⁴¹⁹

Completed during the same year as the article’s publication, the construction of the Gotthard Tunnel symbolised to Kropotkin the essential threat of the capitalist environment. In pursuit of the financial rewards of their project, the Gotthard Railway

⁴¹⁵ Ibid.

⁴¹⁶ Kropotkin, *The Conquest of Bread*, p. 97.

⁴¹⁷ Kropotkin, *Fields, Factories and Workshops*, p. 216.

⁴¹⁸ Kropotkin, *Ethics*, p. 319.

⁴¹⁹ Kropotkin, ‘To the Young’, p. 51.

Company engendered an environment of decay in which epidemics swept through the workers. The most significant contribution made by the company to the lives of their employees was not financial, but biological. As Kropotkin's words indicate, the limited power of the wages they took home stood in contrast to the severity and lasting impact of tuberculosis. Moreover, 'the worker on the Gothard', as Kropotkin wrote, who 'dies of ankylosis', is a casualty of commerce.⁴²⁰ He made the claim explicitly that the suffering and death of the worker was intrinsically connected to capitalism, caused by its insatiable greed and thirst for capital. The sick men on the Gothard were the 'victims of a vicious avarice', he claimed, the biological signs that capitalism's merciless desire for wealth and blinkered quest for riches had been ruthlessly at work.⁴²¹ The fused vertebrae of the ankylosis sufferer, although a condition of the body, had its roots in the avaricious qualities of capitalism.

Capitalist Values

Capitalist societies appear to anarchists as particular forms of educational environments. Within them individuals and groups learn which modes of behaviour and action are acceptable. Capitalism, they argue, teaches people the essential rules of living: how to understand one's existence; what to wish for; how to recognise when something is wrong or right; how to judge others. Anarchism considers capitalism to be a negative pedagogy, one that has a damaging moral impact. Its moral education is presented as a perversion of a vital moral sense in humanity, the creation of a deceptive world of values according to which people live their lives as lies. Part of the anarchist moral critique of capitalism is to challenge the illusion of universality surrounding the values of capitalism and to present them for what they really are: ideas born from a system based on individualism and inequality, which at the same time, by their apparent independence from the system, support and legitimise it. Anarchists maintain that underneath what Crowder terms a person's 'empirical' notion of self – 'individuals as we find them, identified by all the desires they might (actually or

⁴²⁰ Ibid. Kropotkin is referring to ankylosis – the pathological adhesion of bones in a joint, which can occur as a result of disease. Ankylosis or 'ankolostosis', as Kropotkin spells it, is a particular version of this biological condition of abnormal fusion that occurs in the vertebrae.

⁴²¹ Ibid.

potentially) have⁴²² – lies an authentic selfhood, the ‘true’ or ‘real’ self, often associated with genuine human needs of sociality.⁴²³ Once the authentic selfhood is shown to exist and the empirical self revealed as a mere illusion, the spell of capitalist morality will be broken.

Nineteenth-century anarchists developed attacks on the bourgeoisie that tried to blow away the smokescreen of empirical selfhood, behind which, the true reality of capitalism would be revealed. Proudhon’s dictum ‘property is theft’ underpinned his moral critique of capitalism.⁴²⁴ If slavery, Proudhon argued, by depriving ‘man of his thought, his will, and his personality’, could be said to be a form of murder, then property, it follows, by denying society the fruits of its collective labour, can be said to be theft.⁴²⁵ Capitalism, which erects the idea of property not only as a natural dimension of political life, but as a moral category determining behaviour and aspirations, robs society of its power to collectively create, own, and utilise material reality. In his attempt to tell the truth about property, Proudhon seeks to expose the fundamental contradiction of the bourgeois world that serves to morally enslave people.

Similarly, Bakunin’s moral critique of capitalism explored the illusion of the isolated and complete individual. He reasoned that this illusion rules out the very idea of society itself:

It will not be very difficult for me to prove that the human individual whom they love and extol is a thoroughly immoral being. It is personified egoism, a being that is pre-eminently anti-social. Since he is endowed with an immortal soul, he is infinite and self-sufficient; consequently, he does not stand in need of anyone, not even God, and all the less of other men. Logically he should not endure, alongside or above him, the existence of an equal or superior individual, immortal and infinite to the same extent or to a larger degree than himself. By right he should be the only man on the earth, and even more than that: he should be able to declare himself the sole being, the whole world. For infinity, when it meets anything outside of itself, meets a limit, is no more infinity, and when two infinities meet, they cancel each other out.⁴²⁶

⁴²² Crowder, *Classical Anarchism*, p. 7.

⁴²³ *Ibid.*, pp. 7-16.

⁴²⁴ David Morland makes this point about Proudhon. David Morland, *Demanding the Impossible? Human Nature and Politics in Nineteenth-Century Social Anarchism* (London: Cassell, 1997), p. 66.

⁴²⁵ Proudhon, *What is Property?*, p. 13.

⁴²⁶ Bakunin, *Scientific Anarchism*, p. 122.

The centrepiece of bourgeois morality – the complete, isolated individual – negates the possibility of collective existence, logically cancelling out the interaction of human beings. The damaging effects of capitalist moral norms are felt in the spaces between individuals, in their antagonistic, competitive relationships, and the tragic realisation that their lives can never coalesce. Moreover, as an extension of capitalist morality, every isolated individual ‘appears as an exploiter of others, for *materially* he stands in need of everyone else, though *morally* he needs no one’.⁴²⁷ Like Proudhon, Bakunin’s first task as he unmasks bourgeois moral codes is to present its internal contradiction. For Bakunin, this is the distinctive feature of a social order whose moral essence is metaphysical: a world of myths and riddles where the fantasies of the soul, God, immortality, infinity and divine redemption rule supreme.

In ‘The Inevitability of Revolution’, Kropotkin showed how his conception of capitalism analyses not only the effects of its physical environments but also their potential moral impact. After a typical assessment of the corrosive nature of the factory on human health, he changes perspective and considers bourgeois society’s capacity to corrupt: ‘We have been shown recently how the bourgeoisie massacre our children by making them work long hours in the factories. There, they are physically ruined. But that is not everything. Corrupt to the core as it is, society also kills our children morally.’⁴²⁸ To ruin the physicality of social life is not the only tendency of capitalism: its damage is not limited to the bodies of human beings, but is felt in their morality. Kropotkin showed that he was willing to consider a different kind of death by capitalism, a decline in the quality and vitality of values, a corruption endemic to the conditions created by the bourgeoisie.

Kropotkin’s medical understanding of morality helped him to understand capitalist values and the way they come to dominate social morality. Although the values he highlighted for criticism – avarice and individualism – were the same as those singled out by Proudhon and Bakunin, the way he thought about their influence had a new, bio-political dimension. In Kropotkin’s mind, the longing for personal property and riches, the moral basis of capitalism highlighted by Proudhon, appeared as a passion intrinsic to a social environment. Once acquired by individuals, this passion signified the existence of moral sickness. Sanity was destroyed not only by the state, but by the state’s supporting system of economic organisation. Yet, there were

⁴²⁷ Ibid.

⁴²⁸ Kropotkin, ‘The Inevitability of Revolution’, p. 31.

differences to the form of moral disorders produced. Under capitalism, people became morally sick with ‘wealth-accumulating passions’, victims of the irrational desires and inclinations bred by bourgeois culture.⁴²⁹ Those driven by a lust for capital exhibited the symptoms of madness: they were weak of will and lacked restraint, rendering them vulnerable to the most base and condemnable temptations. Kropotkin also transposed the individualism of capitalism – what Bakunin critiqued as its anti-sociality – into a sign of psychiatric illness. To be selfish and egoistic meant to be plagued by the ‘anti-social passions’ common to violent criminals and other dangerous individuals.⁴³⁰ The blinkered self-absorption and narcissism Kropotkin associated with capitalism represented the lack of awareness and consideration for other people indicative of sufferers devoid of the moral sense. Kropotkin fed the principle values of bourgeois culture into a scientific framework of analysis, wherein he could equate the apparent ruthless pursuit of individual wealth with the ‘low and paltry passions’ that afflicted Western civilisation’s moral health.⁴³¹

The capitalist world’s moral threat lay in its role as an environment whose value system, once internalised, could produce in its inhabitants the signs of insanity. Individuals, therefore, could learn the moral codes of capitalism by living amidst the morally destitute conditions of the city. Once again, Kropotkin’s Lamarckian perspective allowed him to investigate these urban surroundings as a set of environmental conditions to which organisms adapt. He viewed the perversion of human morality under capitalism as something that occurred as a result of the ‘influence of the middle class environment’.⁴³² Owing to his understanding of morality as a psychological phenomenon, moral adaptation still appeared as a biological alignment of a species to its environment, a change of their internal structure that could take place during the lifetime of the individual. This evolutionary notion of ‘direct action’ formed the basis of his critique of capitalist values; they were a feature of the external environment to which organisms adjust. As a result, Kropotkin was particularly concerned with the plight of children. They were morally corrupted due to their psychological adaptation to a degrading moral environment. They ‘grow up in the filth – material and moral – of our great cities’,⁴³³ Kropotkin wrote in *In Russian and*

⁴²⁹ Kropotkin, *Mutual Aid*, p. 244.

⁴³⁰ Kropotkin, *Prisons*, p. 368.

⁴³¹ Kropotkin, ‘The Inevitability of Revolution’, p. 29.

⁴³² Kropotkin, ‘To the Young’, p. 59.

⁴³³ Kropotkin, *Prisons*, p. 361.

French Prisons, revealing his understanding of the physical and moral dimensions of the physical environments of capitalism. ‘Left to themselves and to the worst influences of the street, receiving but little care from their parents ground down by the terrible struggle for existence, they hardly know what a happy home is; but they learn from the earliest childhood what the vices of our cities are.’⁴³⁴ For Kropotkin, capitalism was the economic agent behind what he saw as the moral filth and vice-ridden streets of the modern city. In this sense, capitalism manufactures living beings in its own image through the impact it creates on their psychological constitution. Immoral individuals are the victims of corruption, the ‘sad products of an abominably organized society’, whose experience of external reality has produced their moral descent into degeneracy.⁴³⁵

The reach of capitalist values, however, was not limited to the organisms whose moral constitution had adapted to a world of egoistic avarice. The second premise of Kropotkin’s Lamarckism - the inheritance of acquired characteristics – allowed him to consider capitalism from a hereditary perspective. Because he believed that the influence of the environment on living beings could be measured not only by an individual’s acquired characteristics but by the presence of these traits in the individual’s offspring, capitalism appeared to him as a moral conditioner that could exert its power hereditarily. The bourgeois child, he wrote in ‘To the Young’, may ‘have inherited from his father the interest to exploit’.⁴³⁶ Kropotkin’s anti-capitalist stance revealed a sinister biological reality: the learned values of bourgeois society – greed, self-interest, narcissism, etc. – could be visited unknowingly on progeny.

Bakunin had taken an interest in the power of bourgeois inheritance, but of a different form. He believed that the bourgeoisie perpetuated its rule generationally through property, cementing the existence of individual property and inequality by way of family inheritance. ‘Individual and hereditary property’, he claimed, had been ‘the bases of [...] bourgeois omnipotence’.⁴³⁷ For Kropotkin, however, the bases of bourgeois omnipotence were biological. It was the inheritance of psychological defects that had maintained the lifespan of the capitalist regime. In a passage of *In Russian and French Prisons* dealing with the question of heredity, Kropotkin asserted it to be a fact and called on the expert work of psychiatrist Thomson to support his claim. Referring

⁴³⁴ Ibid., p. 362.

⁴³⁵ Ibid., p. 327.

⁴³⁶ Kropotkin, ‘To the Young’, p. 62.

⁴³⁷ Bakunin, *Scientific Anarchism*, p. 198.

to Thomson's article 'The Hereditary Nature of Crime' (1870),⁴³⁸ Kropotkin notes that '[m]any of the anti-social feelings, we are told by Dr. J. Bruce Thompson and many others, are inherited; and facts amply support this conclusion.'⁴³⁹ When he looked deeper into the matter, Kropotkin pointed to the predominance of inherited character traits whose root lay in the bourgeois world: 'But what is inherited? Is it a certain bump of criminality, or something else? What is inherited is insufficient self-control, or a want of a firm will, or a desire for risk and excitement, or disproportionate vanity.'⁴⁴⁰ With a sarcastic nod to Thomson (and Lombroso, who would later develop Thomson's criminal anthropology with its emphasis on the physiognomic signs of criminality), Kropotkin rejected the idea of an inherited predetermined criminality that could be phrenologically observed in a 'bump' on an individual's skull. Instead, the inherited values of the bourgeois world lead to anti-social behaviour and in some cases crime. It is possible, Kropotkin argued, to inherit the psychological imbalance – a weak will and excessive desires – which could lead to an individual's mental illness of moral depravity. Here lies a significant transformation of a conventional anarchist critique of capitalism. The secret behind capitalism's hold over morality and its ability to maintain and perpetuate the moral basis of bourgeois society was not to be found in family inheritance, but in biological heredity.

Even when Kropotkin wrote optimistically about the emergence of anarchist morality, he acknowledged the worrying realisation that the bourgeoisie carries a hereditary lust for power. In 'The Permanence of Society After the Revolution' (1890), he discussed how anarchy would be preserved and strengthened by an evolutionary psychological modification produced in humanity by the establishment of new socio-economic conditions. 'We have it for an acquired fact', he wrote, 'that the inspiration of Liberty causes not only, like every other common cause, a development of fraternity and solidarity amongst its adherents, but a modification of the mental inclinations'.⁴⁴¹

⁴³⁸ In 1870, Thomson had two influential essays published in *The Journal of Mental Science*: 'The Psychology of Criminals' and 'The Hereditary Nature of Crime'. Kropotkin's footnote refers to 'The Hereditary Nature of Crime', in which Thomson posits the existence of a distinct criminal class – 'a set of demi-civilized savages' – distinguishable by its physical and mental characteristics. Within this class, family histories betray not only the hereditary nature of crime, as well as other mental diseases, but its incurability. See J. Bruce Thomson, 'The Psychology of Criminals' [1870], in *The Origins of Criminology*, pp. 94-100, 212-15; idem, 'The Hereditary Nature of Crime' [1870], in *The Origins of Criminology*, pp. 163-67.

⁴³⁹ Kropotkin, *Prisons*, p. 354. Kropotkin misspelt Thomson's name. He had a habit of misspelling the names of psychiatrists. In chapter four I pointed out his incorrect spelling of Krafft-Ebing.

⁴⁴⁰ Ibid.

⁴⁴¹ Kropotkin, 'The Permanence of Society after the Revolution', p. 90.

As Kropotkin went on to explain, he understood this change in social psychology to be the result of an evolutionary process, which rested on the inheritance of acquired impulses towards communal living. However, while this underpinned the road to anarchy, biological development in itself was not exclusive to that direction. Kropotkin thought about the existence and perpetuation of anti-social, bourgeois impulses in the same terms:

We have every reason to believe that this [communalistic/anarchistic] impulse, awakened with a greater intensity than the crudely selfish ones mentioned as having risen in the course of evolution, like them, *by heredity* – quite as readily and to a greater extent – and, being beneficial, will be more persistent than they have been [my emphasis].⁴⁴²

Kropotkin insisted that any political, socio-economic environment will produce modifications of mental inclinations. These psychological, moral changes are then passed down hereditarily to successive generations in a process that can act as the basis of a social state. Capitalism owes its existence to an evolutionary process in which its values are repeatedly learned and inherited by the people inhabiting its world. While this is a form of evolution, following the pattern of acquisition and inheritance, it is, for Kropotkin, not progressive, but the epitome of regression. Under capitalism and bourgeois culture humanity degenerates psychologically.

The moral threat of the capitalist environment, therefore, is its tendency to engrave bourgeois values into bodies and minds. The affected, though victims of their conditions of existence, are nonetheless dangerous. The human products of capitalism are moral delinquents whose lust for greed, coupled with their inability to resist temptation, makes them a threat to others. They are people ‘whose passions may occasionally lead them to commit acts of an anti-social character’.⁴⁴³ There is an uncertainty to this depravity, a scenario whereby individuals seek to gratify their capricious appetites at any cost. Kropotkin warned of the volatility of the bourgeoisie, wherein he saw the anti-social problem of people striving for ‘the satisfaction of lower passions’.⁴⁴⁴ The anti-sociality of the morally insane who populate modern European cities, with their weakness of will and excess of lower passions, exists in both their avarice and their efforts to satisfy it. In jeopardising the safety, health, and lives of

⁴⁴² Ibid., p. 91.

⁴⁴³ Kropotkin, *Prisons*, p. 367.

⁴⁴⁴ Ibid., p. 366.

others, the morally depraved represent a deviation from sociality. Their condition is an abnormality.

Inhabited by morally unhealthy, dangerous victims of bourgeois culture, capitalist cities become conveyor belts of crime. Kropotkin saw a direct link between the acquired and inherited anti-social values of capitalism and the rise of crime in the urban centres of late nineteenth-century European states. ‘The great cities [of France]’, he wrote in *In Russian and French Prisons*, ‘supply the largest number of convicts’ to Clairvaux prison.⁴⁴⁵ The capitalist city is a space of production, where the material goods for life are brought into reality simultaneously with capital. Alongside this productive output, however, is a form of human production that results from the values that permeate within its walls. As Kropotkin wrote: ‘When we see this population growing up in all our big manufacturing centres, we cannot wonder that our big cities chiefly supply prisons with inmates’.⁴⁴⁶ Capitalism does not simply manufacture physical products, but the moral sickness that plagues the urban population.

The Degenerate Class

Since the mid-nineteenth century, anarchist thinkers have created an arsenal of condemnations and critiques that have been levelled against the bourgeoisie as a social group. As an economic class, the bourgeoisie has been presented as a minority of proprietors, the owners of industry who get rich from the toil of the working class majority. Malatesta highlighted a single guiding factor that defined the culture of the bourgeoisie and explained its privileged social standing. ‘This class’, he claimed, ‘are solely influenced by a thirst for power and profit’.⁴⁴⁷ This parasitical interpretation of the bourgeoisie is shared, of course, by Marxism with its conception of bourgeois culture being dependent on economic exploitation. Malatesta also viewed the political supremacy of the middle class in the apparatus of the state as the means through which it satisfies its need to dominate and get rich. As the powerful political grouping, the middle classes displayed another essential feature of their existence: the ruthless and merciless crushing of progress in an effort to maintain the comfort of the status quo.

⁴⁴⁵ Ibid., pp. 319-20.

⁴⁴⁶ Ibid., p. 363.

⁴⁴⁷ Errico Malatesta, ‘Violence as a Social Factor’ [1895], in *Anarchism*, pp. 160-63 (p. 162).

‘The bourgeoisie’, he stated, ‘infuriated by the fear of losing their privileges, will use all means of repression and suppression not only against the Anarchist and Socialist, but every progressive movement’.⁴⁴⁸ In its state of fright, the bourgeoisie becomes a political obstacle not only to peace and stability, but to progress itself.

Anarchists also condemn the moral traits of the bourgeoisie. Bakunin saw a superior self-image as a characteristic feature of bourgeois rule. Its morality was fuelled by an aspiration to dominate. ‘Tired of being an anvil like the great majority of people’, he described, the bourgeoisie wants ‘to become in turn a hammer’.⁴⁴⁹ Italian anarchist Carlo Cafiero (1846-1892) claimed the morality of the bourgeoisie was duplicitous. They created a world of ‘intrigues’ and illusions: conjuring a façade on which their power rested. The purpose of their historical existence was nothing more than to subject the majority to play ‘the game of [the] oppressors’.⁴⁵⁰

From some of his earliest articles for *Le Révolté*, Kropotkin developed a fierce moral and cultural critique of the bourgeoisie. Like other anarchists, he attempted to isolate an immoral minority group that he thought should be condemned for its destructive relation to the majority. Kropotkin’s attack however, in its appeal to ideas and truth claims from contemporary science, stands apart from the work of other anarchist writers. His descriptions and analyses of bourgeois life employed many distinctive tropes from discourses of degeneration that were popular in late nineteenth-century scientific literature. Themes of monstrosity, contagion, and evolutionary regression were important categories in Kropotkin’s depiction of the bourgeois class. As Eric T. Carlson argues, ideas of degeneration often had serious ‘moral implications’ and were employed to ‘condemn or defame certain groups’.⁴⁵¹ But if for Lombroso, Nordau, and others the degenerate groups included criminals, alcoholics, homosexuals, prostitutes, the insane, and, as we have seen in chapter one, anarchists, for Kropotkin the group in society most concerning to the healthy part of the population was the bourgeoisie. With an inversion of images conveying the dangerous underworld of modern cities, Kropotkin targeted the lifestyles, habits, collective morality, and individual physiognomies of the ruling classes with a view to expose their degeneracy.

⁴⁴⁸ Errico Malatesta, ‘The Duties of the Present Hour’ [1894], in *Anarchism*, pp. 181-83 (p. 181).

⁴⁴⁹ Bakunin, *Scientific Anarchism*, p. 134.

⁴⁵⁰ Carlo Cafiero, ‘Action’ [1880], in *Anarchism*, pp. 152-53 (p. 152).

⁴⁵¹ Eric T. Carlson, ‘Medicine and Degeneration: Theory and Praxis’, in *Degeneration: The Dark Side of Progress*, pp. 121-44 (p. 124).

As I have shown, Kropotkin saw something worryingly unhealthy about the nature of the urban capitalist environment. The existence of a particular class of people seemed to him the source of a constant threat of disease that plagued the metropolises of Europe. Yet, rather than the lower classes of the slums, whose poverty plunged them into ill health and destitution, Kropotkin laid the blame for the uncleanness of the modern city on the lives of the bourgeoisie. In particular, he found the bourgeois youth morally and materially repulsive. In ‘The Inevitability of Revolution’, he portrayed the lifestyle of the average middle-class boy:

Some will search in novels for the poetry which is lacking in their lives; they will stuff their minds with this literary rubbish, cobbled together by and for the bourgeoisie at a penny or two a line, and they will end up, like the young Lemâitre, slashing open the bellies and cutting the throats of children in the hope of becoming “celebrated murderers”. Others will give themselves up to execrable vices [...who...] will provide society with its contingent of good citizens with niggardly mentalities who admittedly do not steal handkerchiefs in the street, but “honestly” rob their customers; who have no passion but secretly visit the brothel to get rid of the gravy from the stewpot, who stagnate in their marshes and curse whoever tried to stir up their muck.⁴⁵²

Lacking beauty and the influence of higher, noble feelings, the lives of young bourgeois males are base and disgusting. They are driven not by a love of beauty, but by a bourgeois literature whose cheap, rotten stories inspire the most hideous, bloodthirsty crimes. One assumes Kropotkin is referring to the nineteenth-century playwright and actor Frédéric Lemâitre (1800-1876) who was famed for his performances as criminals on the Boulevard du Crime. It is interesting that Kropotkin should refer to theatre when attempting to convey the threat of the bourgeois youth. This, I believe, is another example of Kropotkin’s tendency to make the metaphorical real and, as he did with his interpretation of Dostoevsky’s Raskolnikov, to blur the boundaries between fictional and non-fictional degeneracy. Kropotkin’s literalism allowed him to emphasise an impurity of being he thought was endemic to bourgeois culture. There is a dirtiness to their exploits, a secret economy of filth lurking in the urban underworld. They pose all kinds of dangers: child murder, violence, deceit, theft, subversive sexual deviancy. The bourgeoisie’s moral degeneracy makes it, not the workers, the dangerous group in society.

⁴⁵² Kropotkin, ‘The Inevitability of Revolution’, p. 32.

Kropotkin's description of the sickening life of the middle-class boy is followed by an equally repugnant portrayal of young bourgeois girls:

That is how it is for the boys! As for the girls, the bourgeoisie corrupt them at an early age. Absurd children's books, dolls done up like whores, the mother's dresses and her example, the chatter of the boudoir – nothing is lacking to turn the child into a woman who will sell herself to the highest bidder. And that child already spreads the infection around her: do not working-class children look with envy on this over-dressed girl, with her elegant demeanour, a courtesan at twelve years old? But if the mother is "virtuous" – in the way a good middle-class woman understands the term – then the situation is even worse. If the child is intelligent and passionate, she will take at its true value this double morality which consists in saying: "Love your neighbour, but plunder him when you can! Be virtuous, but only up to a certain point".⁴⁵³

Kropotkin shows in what terms he understands the bourgeois corruption of youth. Under the influence of meaningless domestic chatter, the girl grows up to be a mute, expressionless commodity. Moreover, she becomes an outlet for the basest depraved passions of the bourgeois male, reduced like her dolls to an object of sexual gratification. Kropotkin implies the importance of the private realm in the process of moral corruption. The family environment, uncaring for the fate of the public sphere, teaches the child the act of deception at the heart of bourgeois virtue. There is a fear of contagion in Kropotkin's descriptions. Her purity having been contaminated by the depraved culture of the bourgeoisie, the once innocent child grows up to become a source of infection herself, contaminating the morally healthy group in society: the working class. In her prostituted existence, the bourgeois girl is a source of moral disease, a centrifugal force of moral decay.

Kropotkin's repulsion at the bourgeoisie also stemmed from what he considered to be its inhuman nature. Images of monstrosity, used to degrade anarchists in the popular European press during the late nineteenth century, were a key feature of Kropotkin's depiction of the bourgeoisie. The class characteristics of the bourgeoisie often sit side-by-side with those of animalistic wildness. As a member of a 'cast of idlers', the bourgeois is defined by 'his moneybags and his brutal instincts'.⁴⁵⁴ A direct connection is established between the values of bourgeois culture and the traits of wild beasts. To be anti-social and selfish, Kropotkin implies, is to be

⁴⁵³ Ibid.

⁴⁵⁴ Ibid., p. 33.

‘depraved and vicious’.⁴⁵⁵ Like the untamed carnivores of a Hobbesian state of war, or perhaps more relatedly, like the degenerate soldiers rolling around in the trenches of the Russo-Japanese War that I discussed in the previous chapter, the bourgeoisie is led by its ‘bestial passions’ and ferocious desires.⁴⁵⁶ Here, Kropotkin is playing creatively with modern science, politicising tropes and themes from degeneration and employing them in an anarchist context. He is flipping conservative uses of degeneration the other way around, actively inverting science and employing it, as it were, against its self-proclaimed proprietors.

The presence of excessive, unbridled urges was, for Kropotkin, a characteristic feature of the bourgeoisie that had a causal effect on its behaviour. It was often these uncontrollable instincts that explained its immorality and dangerous lifestyle. In ‘To the Young’, Kropotkin made this connection when describing a hypothetical set of circumstances he thought were common to modern life. He began with the ‘crime’ committed by the bourgeois youth:

One day you may hear a story of the young girl [...]. Having struggled year after year against poverty, she left her village for the city. She knew life would be hard, but at least she hoped to earn her bread honestly. But by now you can guess the fate that overtook her. Courted by a young bourgeois, she let herself be trapped by his fine words, and gave herself to him with the passion of youth, to find herself abandoned at the end of the year, with baby in her arms. Ever brave, she did not cease to struggle, but she succumbed in the unequal fight against hunger and cold and ended up dying.⁴⁵⁷

The demise of the working-class, former peasant girl was not a consequence of capitalists exploiting her life and labour for capital gain, but of urban bourgeois sexual predation. But how does Kropotkin account for such damaging behaviour on behalf of the young middle-class male? As he makes clear, the irresponsible male youth is corrupt because he comes from a degenerate group, a people whose threat to civilisation is explained by its beastliness and its base, low animalistic appetites. Such stories are the inevitable result of a society divided between humans and beasts: ‘you will understand that they [such tragic incidents] cannot cease while mankind is divided into two camps; the poor on one side and on the other the idlers and the playboys with

⁴⁵⁵ Kropotkin, ‘To the Young’, p. 44.

⁴⁵⁶ Kropotkin, ‘The Inevitability of Revolution’, p. 31.

⁴⁵⁷ Kropotkin, ‘To the Young’, p. 61.

their fine words and brutal appetites'.⁴⁵⁸ Kropotkin explains the young man's entrapment of the girl, his impregnation of her, and subsequent abandonment of his baby through two seemingly contradictory attacks. First, the young man is too civilised: his 'fine words' and charm are characteristic of the duplicitous and deceptive nature of urban bourgeois culture that can be used to trick and ensnare the rural, uneducated peasant. Yet, his danger is also explained by his excessive naturalness: the young bourgeois' attempt to satisfy his sexual desire, his 'brutal appetites', also contributes to the girl's hardship and death. What Kropotkin condemned as the immoral, anti-social behaviour he associated with the bourgeoisie had its roots in both its civilisational decadence and its biological degeneracy.

As we have seen, Kropotkin's reasoning that the moral depravity of bourgeois culture was a result of unchecked desires dominating the rational will, made use of a calculus for insanity popular in the psychiatric moral sciences. His descriptions of bourgeois culture employed a codification of moral insanity used by some of the nineteenth-century criminal psychiatrists to whom I referred in chapter one. Despine, for example, whom Kropotkin applauded for opening up a new medical approach to the political problem of deviancy, used this explanation in his analysis of the morally insane.⁴⁵⁹ In *Psychologie naturelle: Étude sur les facultés intellectuelles et morales* (1868), Despine considered the psychological state of criminals. One of the conclusions he drew from a fifty-year research project into reports of criminal trials was that the serious offender, 'subject to the law of self-interest, decides his course of action only in accordance to his strongest desires [and] depraved lusts'.⁴⁶⁰ Without the resisting force of a will, criminals are 'involuntary slaves to their immoral desires'.⁴⁶¹ What interested Kropotkin about Despine's work, I believe, was the psychiatrist's exploration of a nexus of self-interest, desire, immorality, and mental sickness. Indeed, this was a crucial combination in Kropotkin's scientific condemnation of the bourgeoisie. His assessment of bourgeois culture shares Despine's view that the morally depraved are degenerates who 'are dominated by the appetite for pleasures at any price'.⁴⁶² Inverting ideas from criminal psychiatry, Kropotkin was able to medicalise the very notion of self-interest intrinsic to the culture of bourgeois

⁴⁵⁸ Ibid., p. 62.

⁴⁵⁹ See Kropotkin, *Prisons*, p. 340.

⁴⁶⁰ Prosper Despine, 'The Psychological State of Criminals' [1868], in *The Origins of Criminology*, pp. 83-84 (p. 83). This is an extract from Despine's *Psychologie naturelle*, translated by Nicole Rafter.

⁴⁶¹ Ibid., p. 84.

⁴⁶² Kropotkin, 'To the Young', p. 44.

capitalism, explaining the criminal behaviour of the middle classes as a result of their search for ‘an outlet for their passions’.⁴⁶³ As a consequence, anarchism’s objection to the selfishness and hedonistic pursuit of pleasure it identifies with bourgeois culture is transformed into a fear about moral sickness. For Kropotkin, greed, egoism, and avarice betray the degeneracy of their bearer.

In Kropotkin’s fiercest attacks on bourgeois culture he gives a clue to its moral insanity. The ‘besotted playboy’ with the distinctive attributes of the ruling class is driven in his dealings by a mental imbalance. His lack of solidarity and ‘vilely egotistical feelings’ are the symptoms of a moral disease, characteristic of a man ‘who spends his whole life in the pursuit of new pleasures’. The prototypical bourgeois, Kropotkin argues, will ‘always lean towards the grossest kind of sensuality, and he will degrade everything he touches’.⁴⁶⁴ Like Maudsley’s representations of the criminal classes in his psychological work, Kropotkin’s bourgeoisie is insane, a social grouping ‘deprived of the moral sense’.⁴⁶⁵

Kropotkin’s idea about the degeneracy of the middle classes, however, did not introduce the notion of a bourgeois decline to anarchist thought. Bakunin, for example, had told of the bourgeoisie’s demise. He described how it had fallen from a position of political strength and vitality, engendering three revolutions in 1789, 1830, and 1848, before losing vigour, historical agency, and becoming ‘impotent, stupid, and sterile’.⁴⁶⁶ This image of descent, however, was a promise of the decline of their economic and political supremacy as the ruling class. These were not the terms in which Kropotkin would express their fall. For him the idea of their degeneracy was a biological descent. In ‘The Inevitability of Revolution’, he conveyed the regressive nature of the bourgeois class in a statement about its cruelty to children:

Respect for childhood is one of the finest qualities that developed in humanity as it accomplished its painful march from the state of savagery to its present condition. How often has one not seen the most depraved of men disarmed by the smile of a child? But such respect is vanishing.⁴⁶⁷

⁴⁶³ Kropotkin, ‘The Inevitability of Revolution’, p. 32.

⁴⁶⁴ *Ibid.*, p. 33.

⁴⁶⁵ Maudsley, ‘The Borderland’, p. 107.

⁴⁶⁶ Bakunin, *Scientific Anarchism*, p. 193.

⁴⁶⁷ Kropotkin, ‘The Inevitability of Revolution’, p. 31.

Signalled by the its lack of respect for children – the drudgery of factory labour, the poisoning of girls in Staffordshire potteries, the destitute lives of working-class children in the filth of the capitalist city – the bourgeoisie was reversing the process of civilisational development and pulling humanity back towards its uncivilised past. Kropotkin identified the degeneracy of the bourgeoisie as an evolutionary regression. The ‘painful march’ of evolution from savagery to civilisation, though accomplished, could be re-trodden. This worrying prospect of a savage return, Kropotkin foresaw, would prove to be far more painful, and agonising to traverse, than the centuries-long progressive march to civilisation.

6 Revolution

Honest men of all classes call down the tempest, so that it can burn up with its breath of flame the pestilence that afflicts us, blow away the miasmas that stifle us, and sweep up in its furious progress all that debris of the past which weighs down on us, stifles us, deprives us of air and light, so that in the end it can give us a whole new atmosphere [...]; it becomes a question of progress against immobility, of human development against brutalization, of life against the foetid stagnation of the marsh.⁴⁶⁸

Kropotkin, 'The Inevitability of Revolution'.

Kropotkin's words from 'The Inevitability of Revolution' convey an idea of the anarchist revolution's power, of the reason for its intervention, and of what it could create through destruction. Let us look at the language he uses to depict this. A revolutionary storm, tumultuous and violent, will wash the world clean in a great moment of disturbance. The tempest will 'sweep up' everything in its path: the commotion of revolution will cleanse. Kropotkin endows revolution with literal biological powers: an ability to 'burn' pestilence and eradicate the sicknesses caused by the modern state and capitalism. Real diseases will be wiped out: typhus, scurvy, and tuberculosis countered and prevented. Revolution will target the threat of pathology, healing the madness and insanity afflicting humanity and restoring to society its moral and mental health. Again, Kropotkin's scientific tropes and images are not metaphors of political transformation: the political task of the revolution *is* the resuscitation of the world, to pull it back from the brink of biological death. Human existence will cease to regress and degenerate into savagery, but will move forward and be improved. As a remedy to illness the revolution affects an environmental change, purifying the deathly atmosphere in which humans live. With miasmas blown away, the conditions in which diseases grow and spread are decontaminated and life can flourish once more amidst new-found hygiene.

Science was critical to the success of Kropotkin's concept of revolution. His diagnosis of the biological problems facing the modern world that I explored in

⁴⁶⁸ Ibid., pp. 29-30.

chapters four and five required a medical solution. Empirically verifiable, biological threats could only be cured by practices based on authoritative scientific knowledge. Technologies were needed whose effects would be measured and calculated in advance. Remedies had to be administered with exactness. The scientific quality of revolution, however, did not render it apolitical. Its political dimensions were not lost in a technocratic appeal to scientific thought. As I will show, anarchist political ideas were required to restore human health. If, as Kropotkin wrote in 'Revolution and Famine', 'the very cause of the evil indicates the remedy', then political revolution was essential for regeneration.⁴⁶⁹ Indeed, with the state and capitalism identified as the causes of the evil (sickness, pestilence, miasma), political revolution was the only viable remedy available to humanity to save itself from further decay and death. Revolution was a form of social treatment, an intervention into the social body whose political significance lay in its medical ambition.

Resistance and Revolt

Scientific thought provided Kropotkin with attractive and authoritative ideas that helped him to conceptualise elements of the revolutionary program. Notions of individual resistance and collective revolt found expression in his thought through recourse to contemporary psychology. While only a part of the overall anarchist revolutionary project, the ability to resist and the activity of revolt were crucial preconditions of broader social revolution. Resistance demonstrated the first signs of strength against the destructive and corruptive pressures of the socio-economic, political world. By withstanding the authority of the state and the moral perversion of capitalism, individuals were practicing the elementary skills necessary for successful social revolution. Revolt is also important for anarchist revolution as it expresses the revolutionary spirit of collective human entities in moments of direct opposition to existing political orders. Unplanned and eruptive, revolt forms the emotional basis of the revolution's more strategic political and economic objectives. In the following section I will briefly concentrate on an aspect of Kropotkin's conception of resistance, before going on at length to provide a reading of his understanding of revolt.

⁴⁶⁹ Kropotkin, 'Revolution and Famine', p. 68.

Kropotkin believed that political resistance could begin with a component of an individual's interior psychology. Owing to his tendency to understand political oppression and moral corruption in medical terms, whose effects manifested themselves in insanity, psychopathy, and moral degeneracy, any mode of resistance against these pressures had to have psychiatric qualities. A firmness of will – conceptualised by criminal psychiatrists, as we have seen, as an ingredient of mental health for its ability to check the maddening influence of excessive lower passions – appeared to Kropotkin as the suitable point of departure for political resistance. He believed it could be strong enough 'to resist the first impulse of a passionate character'.⁴⁷⁰ Like the psychiatrists whose work he read, Kropotkin made resistance intrinsic to the will.

These were qualities that had great political implications for Kropotkin's thought. Unlike psychiatric science, which generally saw the passions as endemic to civilisation per se, Kropotkin associated the lower passions and the morbid deterioration of noble passions with the modern state and capitalism. As a result, he transformed mental and moral illness into consequences of undesirable political and economic environments. To resist the influence of the lower passions, and thus insanity, then, meant to resist the particular socio-economic and political reality of the modern state and capitalism. When Kropotkin termed the will 'the interior force of resistance', he was talking literally about its capacity for political resistance.⁴⁷¹ Again, because he saw the threat of the passions to mental health as an endemic feature of the capitalist modern state, to resist them meant to partake in an act of political defiance. Such a transformation of a medical concept into a powerful revolutionary device shows not only Kropotkin's reliance on contemporary scientific thought to articulate anarchism, but his creative ability to politicise it. In this way, politics remained paramount in the meeting of science and anarchism. Kropotkin used psychiatry to think about the anarchist concept of resistance, but in so doing, he added to the will's original, non-radical meaning in professional psychiatric discourses a new, revolutionary significance.

⁴⁷⁰ Kropotkin, *Prisons*, p. 324.

⁴⁷¹ *Ibid.*

These interplays were also at work in Kropotkin's anarchist conception of revolt. At least as far back as Proudhon, who saw in society an immeasurable 'collective force' and a 'higher kind of collectivity', nineteenth-century anarchists had been interested in the potential of collective action and revolt to ignite revolutionary change.⁴⁷² They were excited by the possibility that revolutions could begin with a supra personal, collective expression of what Kropotkin described as the 'spirit of revolt'. Alongside Marx and later nineteenth-century socialists, anarchist thinkers sought to provide historical examples of collective revolt, citing the episodes of the French Revolution and the Paris Commune of 1871 in order to draw lines of revolutionary heritage between themselves and their predecessors.⁴⁷³ However, if for Marx the historical perspective showed the revolutionary role of the proletariat, the emphasis in anarchist historiographies of preceding revolutions is on the collective power of the revolutionary mass.

In his historical interpretations of French revolutionary history, Kropotkin continues the trend of nineteenth-century anarchist thinking that located the agency of revolt in the collective.⁴⁷⁴ He believed that the Paris Commune, for example, 'was not a product of the conceptions of an individual philosopher. It was born of the collective intelligence; it sprang from the heart of an entire people'.⁴⁷⁵ However, while the traditional anarchist emphasis on the revolutionary power of the mass persisted in Kropotkin's thought, the way he understood its character and potential was transformed by contemporary psychological thought. His understanding of the character of revolt and his analysis of what lay behind its force, then, display a conceptual indebtedness to important psychological ideas prevalent in Europe around the turn of the twentieth century.

Kropotkin's interest in collective revolt emerged in the early 1880s. At this time another, non-revolutionary discourse was beginning to interrogate the characteristics of mass human thought and behaviour within revolutionary contexts. As

⁴⁷² Pierre-Joseph Proudhon, *Selected Writings of Pierre-Joseph Proudhon*, ed. by Stewart Edwards, trans. by Elizabeth Fraser (London: Macmillan and Co., 1969), p. 113.

⁴⁷³ For an introduction to the role of the French Revolution in late nineteenth- and early twentieth-century anarchist conceptions of revolution, see C. Alexander McKinley, *Illegitimate Children of the Enlightenment: Anarchists and the French Revolution, 1880-1914* (New York: Peter Lang, 2008), pp. 1-11.

⁴⁷⁴ Heiner Becker argues that in his historical interpretations of the French Revolution, Kropotkin 'wished to demonstrate [...] that all revolutions have begun in the people'. Heiner Becker, 'Kropotkin as Historian of the French Revolution', *The Raven*, 7, 2 (1989), 225-31 (p. 229).

⁴⁷⁵ Petr Kropotkin, 'The Paris Commune', in *Words of a Rebel*, pp. 90-103 (p. 90). Originally appeared in *Le Révolté* as 'La Commune de Paris' (1880).

an expression of popular curiosity about crowds, crowd psychology was part of a broader interest in mass politics that emerged in Europe after the French Revolution and a response to the processes of rapid urbanisation and population increase witnessed throughout the nineteenth century. As a recognised science, however, ‘crowd’ or ‘herd’ or ‘mob’ psychology, as it was known, emerged around the time Kropotkin began writing, in the wake of the Paris Commune.⁴⁷⁶ Crowd psychologists wrote extensively on the psychology of human collectives, examining the crowd in religious ceremonies, national carnivals, and patriotic parades. Yet, theorists were particularly fascinated with the collective power of lower class, revolutionary crowds.⁴⁷⁷ As one of the discipline’s leading figures Gustave Le Bon (1841-1931) indicated in the opening lines of his famous book *La Psychologie des Foules* (1895), crowd psychologists claimed to be examining their object scientifically, exploring its hidden psychological characteristics:

In its ordinary sense the word ‘crowd’ means a gathering of individuals of whatever nationality, profession, or sex, and the chance that may have brought them together. From the psychological point of view, the expression ‘crowd’ assumes quite a different significance. Under certain given circumstances [...] an agglomeration of men presents new characteristics very different from those of the individuals composing it. The sentiments and ideas of all the people in the gathering takes one and the same direction, and their conscious personality vanishes. A collective mind is formed, doubtless transitory, but presenting very clearly defined characteristics. The gathering has thus become what [...] I will call an organised crowd, or, [...] a psychological crowd. It forms a single being, and is subject to the law of the mental unity of crowds.⁴⁷⁸

The new psychology took a historical interest in crowds, exploring the past for examples of when the ‘collective mind’ had been at work. Crowd psychologists looked for exceptions; their objects of analysis were the eruptions of uncontrollable mass activity during the French Revolution, for example, or the unpredictable and destructive disturbances of the Paris Commune. According to historian Susanna Barrows, French crowd theorists in the late nineteenth century reached similar, broad

⁴⁷⁶ For an introduction to the proponents, ideas, and contexts of crowd psychology, see Ginneken, *Crowds, psychology, and politics*, pp. 1-19.

⁴⁷⁷ Susanna Barrows, *Distorting Mirrors: Visions of the Crowd in Late Nineteenth-Century France* (New Haven and London: Yale University Press, 1981), p. 24.

⁴⁷⁸ Gustave Le Bon, *Psychology of Crowds* [1895], ed. by Anna Cuffaro and David Kauders (Great Britain: Sparkling Books, [n.d.]), pp. 17-18. For more on Le Bon’s studies of crowds, his influences, and the socio-political context of the ‘era of crowds’ in late nineteenth- and early twentieth-century France, see Robert A. Nye, *The Origins of Crowd Psychology: Gustave Le Bon and the Crisis of Mass Democracy in the Third Republic* (London and California: Sage Publications, 1975), pp. 59-81.

conclusions in their work, agreeing as to the hyper-emotional, insane character of crowds, their instinctual, irrational behaviour, their destructive potential, and their thirst for violence.⁴⁷⁹

Like many ideas in contemporary science, Kropotkin was well aware of the theories of crowd psychology that were springing up around him. By 1908 he was so convinced that crowds had their own psychology that in a letter to prominent anarchist educationalist Francisco Ferrer (1859-1909) he argued that ‘in order to reach the level of the science of the day’ the anarchist Modern School in Barcelona should include in its programme lessons on ‘the psychology of the individual and of the crowd’.⁴⁸⁰ If anarchist schools hoped to give children a holistic scientific education, then they should teach the most contemporary and up-to-date theories emanating from psychology. This, Kropotkin believed, included the theory of crowd psychology. Children must be made aware of the potential for a new form of consciousness to come into being – the collective mind – with the formation of crowds.

A year later, Kropotkin’s *The Great French Revolution 1789-1793* was published. He presented it as a contribution to recent historical scholarship on the French Revolution and referred to historian and crowd theorist Taine’s influential *The Origins of Contemporary France* (1875-93). In his psychohistories of the French Revolution and the Paris Commune, Taine had tried to trace the degeneracy of France, attempting to mark the decline of its national health since 1789. As Ginneken suggests, Taine wanted to show that ‘something was thoroughly wrong with the national character of the French as a whole’.⁴⁸¹ The first moments of that descent, Taine argued, began with the storming of the Bastille:

The starving, the ruffians, and the patriots all form one body [...]. A new power has sprung up [...], anonymous, without restraint, driven onward by coffee-house theories, by transports of the brain [...]. This is the dictatorship of the mob, and its proceedings, conforming to its nature, consists in acts of violence; wherever it finds resistance, it strikes [...]. The fatal moment has arrived [the storming of the Bastille]. Like a tame elephant suddenly become wild again, the populace throws off its ordinary driver, and the new guides whom it tolerates perched on its neck are there simply for show; in future it

⁴⁷⁹ Barrows, *Distorting Mirrors*, p. 5.

⁴⁸⁰ Petr Kropotkin, ‘The Reformed School’, *Mother Earth* (August, 1908), 259-62 (p. 260).

⁴⁸¹ Ginneken, *Crowds, psychology, and politics*, p. 32.

will move along as it pleases, freed from control, and abandoned to its own feelings, instincts, and appetites.⁴⁸²

For Taine this was a worrying example of the latent wildness of the French masses. His way of interpreting threats to political order and national stability through the language of biological decline, wild irrationality, and psychological ‘transportations’ was typical of public discourses about the crowd in late nineteenth-century France.⁴⁸³ Expressed in these terms, the crowds of the French Revolution represented a threat to civilisation that Taine believed was present in his own day.

It was in this political interpretation of the events where we find Kropotkin’s disagreement with Taine, whose interpretations of French revolutionary history he criticised as the ‘faithful echoes of the fears of the middle class’.⁴⁸⁴ For Kropotkin, in contrast to Taine, the storming of the Bastille by the mob was an indication of the possibility of revolutionary change, a reminder that collective action could produce an effective revolt. It symbolised the ‘first victory’⁴⁸⁵ of the people over authority: a ‘proof of [collective] strength’.⁴⁸⁶ There is none of Taine’s anxiety about civilisational collapse in Kropotkin’s analysis. Rather, the thronging and terrifying mob was essential for the ‘conquest of liberty’.⁴⁸⁷ Kropotkin’s political interpretation of the crowd represented it as an entity through which, as Lucas puts it, the people ‘expressed its collective identity and values [and] regulated its relationship with authority’.⁴⁸⁸ Kropotkin saw the crowd as ‘the natural organ of the people’.⁴⁸⁹ The storming of the Bastille was not simply a manifestation of the crowd’s physical strength, but of its political and moral power.

⁴⁸² Hippolyte Taine, *The Origins of Contemporary France: The Ancient Regime; The Revolution; The Modern Regime: Selected Chapters*, ed. by Edward T. Gargan (Chicago and London: University of Chicago Press, 1974), pp. 104-12.

⁴⁸³ See Christopher E. Forth, ‘Intellectuals, Crowds and the Body Politics of the Dreyfus Affair’, *Historical Reflections*, 1, 24 (1998), 63-91. Forth analyses Dreyfusards’ interpretations of the widespread violence of anti-Semitic crowds, which erupted across French cities in 1897. The crowd became a contested discursive terrain onto which were projected images of feminine wildness, weak-will, beastliness, seduction, sexual deviance, and contagion. The politics of the Dreyfus affair were refracted through bodily metaphors of the collective behaviour of the masses.

⁴⁸⁴ Petr Kropotkin, *The Great French Revolution 1789-1793* [1909], trans. by N. F. Dryhurst (London: Orbach and Chambers, 1971), p. 74. Originally published in Paris as *La grande révolution 1789-1793* (1909).

⁴⁸⁵ *Ibid.*

⁴⁸⁶ *Ibid.*

⁴⁸⁷ *Ibid.*

⁴⁸⁸ Colin Lucas, ‘The Crowd and Politics between “Ancien Regime” and Revolution in France’, *The Journal of Modern History*, 3, 60 (1988), 421-57 (p. 434).

⁴⁸⁹ *Ibid.*

Despite these differences, Kropotkin and Taine are in agreement about the role of the crowd in the unfolding of events and they share a fascination with the mob's revolutionary potential. In chapter twelve of *The Great French Revolution*, 'The Taking of the Bastille', Kropotkin reiterates Taine's view that revolutionary political processes are ignited by crowd psychology:

On the way the *mob*, furious at his [Marquis de Launey] treachery, heaped every kind of insult on him; twenty times he was nearly killed, despite the heroic efforts of Cholat and another. These two men protected him with their own bodies, but, when only a hundred steps from the Hotel de Ville, he was dragged out of their hands and decapitated [...]. There was great emotion, and tears were shed at the sight of the phantoms who issued from their cells, bewildered by the light of the sun and by the sound of the many voices [...]. These poor martyrs of royal despotism were carried in triumph by the people through the streets of Paris. The whole town was soon delirious [...]. *In this way the Revolution began* [my emphasis].⁴⁹⁰

In his keen interest in instances of mob behaviour Kropotkin shares the historical focus of crowd psychologists. He agrees with Le Bon that a crowd is not simply 'a gathering of individuals', but signifies the appearance of a collective mind. His crowd exhibit in abundance the same characteristics attributed to the mob by crowd psychologists. It was emotional: furious with rage, shedding tears of despair and horror. It was destructive and violent: closing in on its victim and brutally killing him in the streets. It was irrational: drenched in delirium. Moreover, Kropotkin and Taine share the view that the collective psychology of the crowd ignited the revolution. For both thinkers, the storming of the Bastille represented the critical moment when empirically observable facts of human psychology created the conditions for revolt and propelled individuals towards political rebellion.

Drawing on the knowledge of crowd psychology, Kropotkin was able to present the idea of collective action in anarchist politics as a scientific fact. These ideas also helped him conceptualise the transformation of peaceful individuals into members of a revolutionary group. This was an important idea of change within his of broader understanding of revolution. In 'The Spirit of Revolt', he considered how this process could occur:

⁴⁹⁰ Kropotkin, *The Great French Revolution*, pp. 86-87.

From these still pacific thoughts about insurrection and revolt, extends a great abyss which among the major part of mankind divides reason from act [...]. How is that abyss crossed? How did these men, who just yesterday grumbled peacefully about their fate as they puffed their pipes and a moment afterwards humbly saluted the same gendarme they had just been cursing a few days later, seize their pitchforks and billhooks, and attack in his castle the lord who yesterday had seemed so terrible? By what magic have these men, whom their wives justifiably treated as cowards, become transformed today into heroes who march through shot and shell to conquer their rights. How have these *words*, so often spoken in the past and lost on the air like the fading sound of bells, at last become transformed into *acts*?⁴⁹¹

Kropotkin gives the answer to this question: the action of minorities awakens the spirit of revolt in the masses. The first part of this formulation, that is, that ‘propaganda by deed’⁴⁹² (peaceful protest, acts of resistance, terrorism) plays a role in the revolutionary process, has been explored in interesting ways by a numbers of scholars.⁴⁹³ The second, that a collective spirit of revolt is aroused by an external emotional trigger or spark, has received less attention. To fully understand Kropotkin’s view of revolutionary tactics we need to take seriously the role of the mass and the crowd in ‘The Spirit of Revolt’. For as Kropotkin tells us, the spirit of revolt is not a force that inspires individuals to commit propagandistic acts, nor is it a spirit awakened in individuals impressed by such acts; it is ignited in the crowd itself, whose heroism carries its constituent members along on a ‘wave [that keeps] on mounting’,⁴⁹⁴ a wave of ‘tumultuous demonstrations [...], riots and uprisings’.⁴⁹⁵ Turning back to Kropotkin’s questions in the above quotation, we notice that the pacifistic individuals are transformed into revolutionary heroes as part of a group, that is, part of a violent mob that attacks a castle, or part of a marching insurrectionary movement. Their ‘audacity’, as Kropotkin put it, derives from the group’s audacity. The spirit of revolt

⁴⁹¹ Kropotkin, ‘The Spirit of Revolt’, p. 186.

⁴⁹² The slogan and theory of ‘propaganda by deed’ is thought to have come to prominence with Italian Risorgimento revolutionary Carlo Pisacane (1818-1857). It later developed in Bakuninist circles in the 1870s. As a general interpretation, it pertains to the notion that deeds should precede ideas in the service of revolution: action, not ideas, stimulates the revolt of the masses. For an introduction to the emergence of the idea in anarchist thought, see Cahm, *Kropotkin*, pp. 76-92.

⁴⁹³ See, for example, Fleming, ‘Propaganda by the deed: Terrorism and anarchist theory in late nineteenth-century Europe’; Richard Jensen, ‘Daggers, Rifles and Dynamite: Anarchist Terrorism in Nineteenth-Century Europe’, *Terrorism and Political Violence*, 1, 16 (2004), 116-53; D. Novak, ‘Anarchism and Individual Terrorism’, *The Canadian Journal of Economics and Political Science*, 2, 20 (1954), 176-84; Niall Whelehan, ‘Political violence and morality in anarchist theory and practice: Luigi Galleani and Peter Kropotkin in comparative perspective’, *Anarchist Studies*, 2, 13 (2005), 147-68.

⁴⁹⁴ Kropotkin, ‘The Spirit of Revolt’, p.199.

⁴⁹⁵ *Ibid.*, p. 186.

has not been awakened in their individual minds, as such, but in the mind of the revolutionary collective of which they are a part.

Minority, propagandistic acts trigger the heroism of the masses – Kropotkin conceived of this as a form of contagion. ‘Courage, devotion, the spirit of sacrifice’, he argued, ‘are as contagious as cowardice, submission and panic’.⁴⁹⁶ The act ‘infiltrates into men’s minds’.⁴⁹⁷ Alongside contagion, however, Kropotkin conceives of the knock-on effect of propaganda by deed on the masses through the notion of imitation.⁴⁹⁸ The mass imitates action: ‘the crowd [...] will follow the counsels of those whose theoretical ideas are perhaps less clearly formulated and whose aspirations are less broad, but whom it knows because it has seen them in action’.⁴⁹⁹ Here, Kropotkin anticipates Le Bon’s inconsistencies when thinking about transmission between human beings in the context of crowds. As Nye explains, ‘Le Bon was not precise [...] in distinguishing between suggestion, mental contagion and imitation in his account of crowd behavior’.⁵⁰⁰ In ‘The Spirit of Revolt’, Kropotkin similarly moves unclearly between contagion and imitation. What is clear, however, is the idea that propaganda by deed ignites the revolutionary spirit of the crowd. This was also an important idea in crowd psychology. Crowd theorists considered how the masses could be led, directed, even hypnotised by influential figures.⁵⁰¹

Novak suggests that propaganda by deed ‘was believed to have an “educational” value in reminding the working class of its oppression, raising its revolutionary confidence, and making it more determined to overthrow the existing system’.⁵⁰² For Kropotkin, the isolated revolutionary act certainly has an impact on the masses, but to think of this influence as a form of education is misleading. Education is about an appeal to reason – explaining, convincing, helping to understand. The spirit of revolt in Kropotkin’s crowds, like those of the psychologists, was awakened not by rational education, but by emotional stimuli. The crowd was stimulated not by clarity of argument, but by a moving act. In another pamphlet from 1881 that reflected on the

⁴⁹⁶ Ibid.

⁴⁹⁷ Ibid., p. 187.

⁴⁹⁸ Ibid.

⁴⁹⁹ Ibid., p. 189.

⁵⁰⁰ Nye, *The Origins of Crowd Psychology*, p. 71.

⁵⁰¹ In *L’Opinion et la foule* (1901), crowd theorist Gabriel Tarde (1843-1904) criticised Kropotkin for personally imprinting his ideas on the public imagination. See Serge Moscovici, *The Age of the Crowd: A Historical Treatise on Mass Psychology*, trans. by J. C. Whitehouse (Cambridge: Cambridge University Press, 1985), p. 205.

⁵⁰² Novak, ‘Anarchism and Individual Terrorism’, p. 177.

execution of Russian revolutionary Sofia Perovskaia (1853-1881) – the first woman in Russia sentenced to death by hanging for revolutionary activism – Kropotkin gave a sense of his assumption that the crowd responds emotionally to stirring external events, and what is more, that its revolutionary vitality can be gauged by the intensity of its emotional state. He imagined Perovskaia's thoughts as she stood on the scaffold: 'By the attitude of the crowd she understood that she had dealt a mortal blow to the autocracy. And she read in the sad looks which were directed sympathetically towards her, that by her death she was dealing an even more terrible blow, from which the autocracy will never recover.'⁵⁰³ Standing before the spectacle of execution, the crowd is saddened by Perovskaia's impending death, able to sympathise with her own emotional experience. Her martyrdom has no educational properties, but appeals to the crowd's instincts, feelings, and passions. The crowd's revolutionary power is generated by this spectacle and reflected by its emotional response to the unfolding scene: Perovskaia knows, by casting her eyes over the entire crowd and gaining a sense of its collective 'attitude', that she has awakened in it the spirit of revolt that will bring down the autocracy.

Returning to 'The Spirit of Revolt', we can see that Kropotkin wants to give an impression of the spirit's collective character by describing how it operates in the 'crucible of the crowd and the street'.⁵⁰⁴ Within this furnace, a setting of intense heat where individual elements melt into one another, Kropotkin agrees with the crowd psychologists that 'the population will be emboldened and their gatherings will become more and more threatening'.⁵⁰⁵ Like Kropotkin's mob in his history of the storming of the Bastille which I analysed above, the revolutionary crowd brought about by the action of minorities is dangerous and violent: the crowd manhandles the rich, assaults religious leaders, throws its enemies into the rivers of the city.⁵⁰⁶ Moreover, the mob has a mind of its own: 'the crowd amuses itself by jeering at the members of the government as they pass by', expressing its emotional unity and singular personality.⁵⁰⁷ Such behaviour, however, is the essence of the spirit of revolt as it grows in the gathered crowd – it symbolises the immanency of action and revolutionary heroism. Indeed, while propaganda by deed ignites collective revolt, it is

⁵⁰³ Petr Kropotkin, 'La Verité sur les executions en Russie' [1881], quoted in Woodcock and Avakumovic, *The Anarchist Prince*, p. 343. Originally appeared in *Le Révolté*.

⁵⁰⁴ Kropotkin, 'The Spirit of Revolt', p. 189.

⁵⁰⁵ *Ibid.*, p. 196.

⁵⁰⁶ *Ibid.*, pp. 195-96

⁵⁰⁷ *Ibid.*, p. 196.

only collective force that can bring about a revolution. As Fleming rightly points out, ‘it was not sufficient [for Kropotkin] that the masses *support* the revolution; they must also *make it*’.⁵⁰⁸ Kropotkin employs dominant tropes about the late nineteenth-century crowd’s character – its unity, collective spirit, violence, audacity, heroism – and inverts them into a powerful theory of revolutionary strategy.

Finally, let us recall the problem Kropotkin posed about an individual’s transformation into a revolutionary hero. He asked his reader what magic is behind this metamorphosis. We can see that, although the action of minorities – propaganda by deed – is the catalyst, the original spell in this process, it gives birth to a new form of magic: the spirit (*l’esprit*), or mind of revolt. As the bearer of this spirit, the crowd therefore solves the next problem Kropotkin raises about the translation of an individual’s *words* into *acts*. This is not a matter of individuals losing their voice within the crowd and becoming mute through its action. On the contrary, it is through their absorption into the crowd and public participation in its action on the street that they acquire a new, louder, and more expressive voice: ‘the language of the people’.⁵⁰⁹ The language of the people is action.

This reading of Kropotkin’s theory of revolt raises an interesting contradiction. We can notice that the scientific tropes of contagion and transmission that, as we have seen, are central to his pessimistic anarchist diagnoses, function here to support his optimism about the possibility for mass revolutionary action. Moreover, the loss of the will and the reign of the passions, an imbalance that elsewhere frames Kropotkin’s scientific understanding of social disease, signify here the revolutionary power of the collective. The intensity of the crowd’s emotion is not a sign of its ill health and degeneracy, but an indicator of its potential to erupt into a challenge to authority. That Kropotkin uses biomedical images both to identify and subvert power is an ambivalence of his political thought resulting from the fluid interplay of science with his understanding of anarchism.

⁵⁰⁸ Fleming, ‘Propaganda by the deed: Terrorism and anarchist theory in late nineteenth-century Europe’, p. 6.

⁵⁰⁹ Kropotkin, ‘The Spirit of Revolt’, p. 189.

Revolution as Hygiene

Anarchists present revolution as a response to particular problems. We can identify overarching, all-embracing goals in their proposals for change. These goals can be understood as thresholds by which the success of the revolution could be judged. In 1846, Proudhon formulated the problem in the following way in a letter to Marx: ‘How can we put back into society, through some system of economics, the wealth which has been taken out of society by another system of economics?’⁵¹⁰ The economic revolution was put forward as a process that would allow humanity to reclaim the fruits of collective labour lost to ownership and property. In this way, Proudhon’s conception of revolution established a return: the restoration of social wealth. Proudhon’s contemporary Déjacque also pursued an overarching revolutionary goal. In contrast to Proudhon, however, his goal was not economic, but political. The political consequences of revolution – the ‘abolition of government in all its guises’ – would secure ‘anarchy, individual sovereignty, complete, boundless, utter freedom’.⁵¹¹ Déjacque’s revolution promises the release of the restrictions that shackle the life of societies. His ambition was typically socialist: the revolution was designed to forcibly eradicate barriers to emancipation.⁵¹² Its political character lay in its pursuit of an all-embracing concept of freedom made possible by the revolutionary removal of governmental control.

Likewise, Kropotkin believed an anarchist revolution would bring about positive economic and political changes for humanity: a federated, communal social organisation, freedom from the dictates of authoritative and dominative government, a release from the exploitative demands of capitalist production. But for Kropotkin, the fundamental aim of revolution was to stave off the biological degeneration of social health. Revolution was a medical response to an array of social sicknesses – bodily, mental, moral – whose pernicious effects had brought humanity to the brink of death. Kropotkin justified revolution as a remedy that ‘will sweep away all this decay, enliven with its breath the hearts that have grown torpid, and bring to humanity the devotion, the abnegation, the heroism, without which a society becomes debased and

⁵¹⁰ Proudhon, *Selected Writings*, p. 151.

⁵¹¹ Déjacque, ‘The Revolutionary Question’, p. 60.

⁵¹² Kinna suggests that making emancipation possible is typical of socialist theory’s conception of revolution. See Ruth Kinna, ‘Revolution’, in *Encyclopedia of Power*, ed. by Keith Dowding (Los Angeles, London, New Delhi, Singapore, and Washington DC: Sage, 2011), pp. 576-77 (p. 576).

degraded and eventually decomposes'.⁵¹³ The most fundamental promise made by Kropotkin's revolutionary politics was not freedom, but revival. It would intervene at a critical moment in the process of social decline, stopping the rot before it would be too late.

Kropotkin's medical conception of revolution employed the typical anarchist revolutionary trope of destructive-creationism. Leading anarchist thinkers in the nineteenth century had thought of revolution as a constructive force, but accepted that the ambition to create new social and economic conditions could only be realised by the destruction of the forms of the old world. The popular misconception of anarchism – a dangerous attempt to rid society of all order in a nihilistic, terroristic search for chaos – focuses only on the destructive side of its dual aspect of revolution. But as Woodcock points out, 'in the mind of no anarchist thinker has the idea of destruction ever stood alone'.⁵¹⁴ The idea of anarchism as being driven by an urge to destroy overlooks the philosophical and political meaning of destruction in the anarchist conception of revolution. Destruction was a means to a creative end: it was a precondition. As Proudhon stated in 1851, 'I destroy and I build up'.⁵¹⁵ To flatten the world through destructive revolution was to create the canvas on which to paint the future, a tabula rasa necessary to produce something new. In this sense, the destruction inherent in revolution can be understood as the autumn in one great cycle of political change.

Bakunin developed this idea in his disputes with Marxism during the mid-nineteenth century, adding to destructive-creationism a political dimension that accommodated anarchism's unique stance against the state. Bakunin's famous adage that 'the passion for destruction is a creative passion',⁵¹⁶ although part of anarchism's broader philosophical ontology, emerged from its denial of the state's viability as a tool of revolution and the subsequent need for it to be destroyed before the creation of the new anarchist world could begin. In the anarchist worldview, the Marxist idea of hijacking, enlarging, and strengthening the state as a force for social change would corrupt the revolution and perpetuate the existence of the source of social evils. Only by completely destroying the state could anarchism's political ideals of federalism, non-hierarchical social relations, and equality hope to prevail. As a concept of

⁵¹³ Kropotkin, 'The Spirit of Revolt', p. 184.

⁵¹⁴ Woodcock, *Anarchism*, p. 11.

⁵¹⁵ Pierre-Joseph Proudhon, quoted in Woodcock, *Anarchism*, p. 11.

⁵¹⁶ Bakunin, *Bakunin on Anarchy*, p. 57.

transition, Bakunin's political reading of destructive-creationism implies the mutual dependency of ruin and design that finds the signs of freedom in the death of the state.

Kropotkin developed the anarchist trope of destructive-creationism in a culture where politics related to a world characterised by the seeming inseparability of decay and renewal. Sally Ledger and Roger Luckhurst argue that the 'dialectic between de- and re-generation was played out on a broad scale between different political stances and different philosophies, and often in factions within disciplines'.⁵¹⁷ In a reply to Nordau's *Degeneration*, for example, economic and social philosopher Alfred Egmont Hake (1849-1916) argued that 'the alarming symptoms of degeneration, revealed by the psychologists, are the first symptoms of regeneration'.⁵¹⁸ Kropotkin's work is characteristic of this tension, seeing in the devastating sickness of social health not only an alarming situation of decomposition, but a fascinating promise of revolution. The degenerative state of the old world would stimulate an anarchist regenerative revolution.

When Kropotkin wrote that 'the instinct to destroy [...] is so natural and so just because it is also an urge to renew', he was reiterating Bakunin's political maxim in a millenarian culture sympathetic to the view that death guarantees life.⁵¹⁹ Kropotkin's anarchist stance against the state and his insistence on its unsuitability as a tool of revolution drew hope from the apocalypse: devastation meant progress. Thus, through this symbiotic, reciprocal relationship between destruction and renewal, Kropotkin could make the paradoxical argument that biological decline is a symptom of renewed life. In *Modern Science and Anarchism*, he applied destructive-creationism to revolution: 'During a revolution new forms of life will always germinate on the ruins of the old forms'.⁵²⁰ With the state destroyed completely, anarchy would be a possibility.

Unlike Proudhon, Kropotkin saw the problems that faced revolution not in terms of economic inequality, but through the lens of social medicine. The pressing social question, as he often put it, of 'misery and degradation [...], vice [and] crime',

⁵¹⁷ Sally Ledger and Roger Luckhurst, 'Introduction: Reading the "Fin de Siècle"', in *The Fin de Siècle: A Reader in Cultural History, c. 1880-1900*, ed. by Ledger and Luckhurst (Oxford: Oxford University Press, 2000), pp. xiii-xxiii (p. xxiii).

⁵¹⁸ Alfred Egmont Hake, *Regeneration: A Reply to Max Nordau* (Westminster: Archibald Constable and Co., 1895), p. 315.

⁵¹⁹ Petr Kropotkin, 'Expropriation', in *Words of a Rebel*, pp. 205-22 (p. 222). Originally appeared in *Le Révolté* as 'L'Expropriation' (1882).

⁵²⁰ Kropotkin, *Modern Science*, p. 87.

appeared to him as an agglomeration of social diseases demanding of his concept of revolution that it addressed not only the wealth of society but, primarily, its health.⁵²¹ The revolutionary challenge confronting Kropotkin can be put differently to the predicament that faced Proudhon: It was not a question of ‘how can we put back into society, through some system of economics, the wealth which has been taken out of society by another system of economics?’, but of *how can we protect and improve, with the knowledge of the medical sciences, the health of the social body which has become so afflicted?* Believing that his critique of the state and capitalism ‘cut to the heart of society’s sickness’,⁵²² Kropotkin could argue that the political (destroying the state) and economic (replacing capitalism with communism) transformations of the anarchist revolution would function as a form of medicine.

In this regard, Kropotkin’s revolution was literally curative. It does not just cure social ills; it cures society’s illnesses. He understood revolution as a remedial force in so far as it eradicated the sources of sickness. He did not want revolution to be limited by an attempt to reduce the symptoms of social disorders, but to prevent them from occurring by destroying their causes. As he wrote in ‘The Inevitability of Revolution’, revolutions should ‘cleanse societies down to the roots, for as long as the causes of the gangrene from which they suffer remain, there can be no cure’.⁵²³ With its primary goal being disease prevention, revolution was a form of social hygiene. ‘Hygiene’, he wrote in *In Russian and French Prisons*, ‘is the best of medicines’.⁵²⁴ The only way to cure society was through a revolution that had as its fundamental quality and ultimate goal to establish a state of public hygiene. Kropotkin’s revolution would only be truly medical if it precluded the possibility of the plague itself.

Kropotkin’s conception of the politico-economic anarchist revolution as a form of public hygiene resonated with contemporary scientific approaches to social health. As the physical and moral hygiene of populations emerged as a regulatory concern for European states in the nineteenth century, scientific thinkers across a wide range of interconnected disciplines began to see hygiene as the most efficient and effective medical measure against social illnesses.⁵²⁵ Italian criminologists, for example, whose research Kropotkin had found so compelling, were exhilarated by the possibility of

⁵²¹ Kropotkin, *Fields, Factories and Workshops*, p. 203.

⁵²² Kropotkin, ‘The Situation Today’, p. 20.

⁵²³ Kropotkin, ‘The Inevitability of Revolution’, p. 32.

⁵²⁴ Kropotkin, *Prisons*, p. 339.

⁵²⁵ Rimke and Hunt, ‘From Sinners to Degenerates: The Medicalisation of Morality in the Nineteenth Century’, p. 61.

preventing the disease of crime. ‘Instead of trying to cure crime’, argued Lombroso in the second edition of *Criminal Man* (1878) ‘we must try to prevent it by neutralizing its causes’.⁵²⁶ Ferri also called for a political response that would ‘apply the rules of social hygiene in order to reach the roots of criminality’.⁵²⁷ Kropotkin built his idea of a hygienic revolution around a similar model. ‘Instead of merely curing diseases’, he wrote, ‘medicine tries now to prevent them’.⁵²⁸ He was in line with contemporary medical approaches to social problems, arguing that anarchism should ‘trust to hygiene’ the task of their prevention.⁵²⁹

Kropotkin took these conceptual tools from biosocial science and turned them towards the service of anarchist revolution. In ‘To the Young’, he lamented what he saw as the unsustainable state of social health caused by the state and capitalism and offered hygiene as the necessary response: ‘No, it is all unjust! It cannot continue like this! It is not a question of curing sickness; they must be prevented.’⁵³⁰ But how could a political revolution cleanse society through social hygiene rather than merely treating its sicknesses? Kropotkin goes on to provide the answer to these questions: ‘To hell with drugs! Fresh air, proper feeding, less brutalising work: that is where we must start. Without these things, the whole occupation of a doctor is no more than a trickery and a deception’.⁵³¹ By destroying the state and the capitalist system of production, anarchist revolution would be able to eradicate the pestilential conditions so conducive to infection, contagion, and epidemics in which human populations were condemned to live. Once more, Kropotkin’s Lamarckism is important for his political ideas, making the conception of the revolution’s hygienic qualities possible. For the only way to cure the biological defects and psychological abnormalities of humanity would be to remove the political and economic agencies perpetuating the physical environments in which they had developed. Thus, the primary objective of the revolution was not the eradication of authority, domination, exploitation, and government understood as political ends in themselves, but the rearrangement of the social field of reality for the sake of improved human health. The dampness and overcrowding of prisons, the filth of the cities, and the destitution of sites of work would all be replaced by environments with greater light, fresh air, space, and cleanliness. The first work of the revolution

⁵²⁶ Lombroso, *Criminal Man* [1878], trans. by Gibson and Rafter, 2nd edn, p. 135.

⁵²⁷ Ferri, *The Positive School of Criminology*, p. 101.

⁵²⁸ Kropotkin, *Prisons*, p. 339.

⁵²⁹ Kropotkin, *Fields, Factories and Workshops*, p. 211.

⁵³⁰ Kropotkin, ‘To the Young’, p. 46.

⁵³¹ *Ibid.*

would be to implement the scientifically determined norm of hygiene to restore the biological life of society.

Again, Kropotkin's political thought reflects specific scientific standpoints in criminology. The idea that changing the socio-economic and political environment could act as a medical, hygienic remedy to social health was an important component of Ferri's criminology. Criminal statistics showed him that in order to cure society of crime, a modification of surroundings was necessary. This process of causation he summed up scientifically as 'the possibility of modifying effects by modifying the activity of these [environmental] causes'. Even Quetelet, Ferri argued, had showed faith in this method of intervening into the operation of social law:

Quetelet himself recognised this when he said, "If we change the social order we shall see an immediate change in the facts which have been so constantly reproduced [...]. These studies therefore show how important is the mission of the legislator, and how responsible he is in his own sphere for all phenomena of the social order."⁵³²

As I showed in chapter two, Kropotkin thought of social laws in a similar way to Quetelet: as laws of chance and probability, as regularities in social behaviour caused by sets of social conditions. Like Ferri, who believed the means to cure society of crime was to change social law through environmental modification, Kropotkin's scientific revolution would seek to alter these laws in an attempt to cure the social body of social disease. By removing the socio-political and economic order of state capitalism, the repeated, statistically represented facts of social disease would be immediately reconfigured.

The speech Kropotkin gave at the First International Eugenics Congress placed social hygiene at the heart of revolutionary anarchist-socialism. It advanced a eugenicist argument antithetical to sterilisation. Kropotkin supported the goal of eugenics – improving the biological condition and preventing the biological decline of human populations – but thought this would not be achieved by sterilisation because it systematically avoided 'considerations about the influence of surroundings upon the soundness of what is transmitted by heredity'.⁵³³ Referring to modern criminology and the psychiatric work of Krafft-Ebing, Kropotkin touched on a number of potentially

⁵³² Ferri, 'The Data of Criminal Statistics', p. 298.

⁵³³ Kropotkin, 'The Sterilization of the Unfit', p. 122.

inheritable diseases whose causes lie in the social environment: crime and sexual aberrations are created or intensified by prisons, sexual promiscuity can be caused by overcrowded living conditions, poverty, and hunger, and feeble-mindedness and epilepsy both have ‘social roots’.⁵³⁴ The solution to these problems, Kropotkin argued, was political: ‘making Socialism’. But what exactly did this mean? To make socialism was to ‘destroy the slums [and] build *healthy* dwellings [my emphasis]’. It was ‘to pave the streets [and] to bring a supply of water to a city’.⁵³⁵ Here, Kropotkin’s conception of socialism, as a revolutionary political idea, is designed to bring about changes that are understood in biological terms. As a political response to social problems, Kropotkin’s speech presented revolutionary change as a form of eugenics that would function through social hygiene: it improves the biological condition of populations by making their social environment healthier.

Kropotkin, the bio-political revolutionary, felt a great sense of frustration with the wilful ignorance of contemporary society towards the deterioration of its health. Society simply refused to acknowledge the causes behind its decline. Under the state and capitalism, it ‘does not want to hear its own diseases spoken of and dissected’.⁵³⁶ Against this, Kropotkin presented anarchist revolution as a force that would not only be open and honest about the diseases afflicting society, but would perform the operation required to remove them. A passage in ‘To the Young’ addressing the physician asks for the scientific expertise that would make this revolution possible:

And you, physician, whom hard experience has led to understand socialism, do not tire of telling us – today, tomorrow, every day in every occasion – that humanity is doomed to degenerate if it remains in the present condition of living and work; that your drugs will remain powerless against sickness while 99 per cent of humanity vegetate in conditions absolutely opposed to those that science teaches; that it is the causes of sickness which must be eliminated – and how are we to eliminate those causes? Come then with your scalpel to dissect with a meticulous hand this society on its way to collapse, tell us what a rational way of life could and should be, and, as a true doctor, repeat to us untiringly that one does not hesitate to amputate a gangrenous limb when it might infect the whole body.⁵³⁷

⁵³⁴ Ibid., p. 123.

⁵³⁵ Ibid.

⁵³⁶ Kropotkin, *Memoirs*, p. 457.

⁵³⁷ Kropotkin, ‘To the Young’, p. 57.

Revolution is the elimination of the causes of sickness. No longer will the state and capitalism be able to create and protect the conditions of life and work in which humanity has become degenerate. Anarchy, on the contrary, will establish conditions ‘that science teaches’ are conducive to good human health. The revolution has no miracle cure; it merely seeks to put into practice knowledge of hygiene that had been developed by nineteenth-century medicine. Through the application of existing scientific knowledge for the betterment of human life the revolution would rationalise society. Looking back to the epigraph that I placed at the very beginning of this thesis, we can now see that Kropotkin’s prescription for all of humanity’s sicknesses was political: a medical revolution.

Anarchy

When anarchists argue in favour of their visions of a post-revolutionary society they emphasise the importance of social order. Their insistence that revolution will bring order to the world is given as a response to the popular reproach that anarchy would subject humans to a life of chaos. The criticism that anarchist revolution, by cutting the regulating cords of political government would plunge human beings into a state of confused and uncontrollable disarray, is dismissed as a popular misconception. On the contrary, anarchists argue that the existence of states, governments, and capitalist production inflict disorder on social life. The continual military conflicts between states, the rule of the majority by the minority, the increasingly sharp disparity between rich and poor, and the ungoverned, capriciousness of the free market are the features of the modern world anarchists describe as disordered. Anarchy, on the other hand, with its rationalised systems of production and exchange and communally managed, federated forms of social life, would restore order. Mid-nineteenth-century French anarchist Anselme Bellegarrigue (1813-c.1900), for example, thought of the end of government as a means to establish social order. ‘If dispensing with government is, on the one hand, the establishment of order, and, on the other, the enshrinement of anarchy’, he wrote, ‘then order and anarchy go hand in hand’.⁵³⁸ Anarchist attempts to abolish the existence of governments were an assault on chaos, revolutionary attacks

⁵³⁸ Anselme Bellegarrigue, ‘Anarchy is Order’ [1850], in *Anarchism*, pp. 58-60 (p. 60).

whose pursuit of anarchy had as their anticipated outcome a situation of social harmony.

This anarchist tendency to invert the charge of disorder is evident in Kropotkin's thought. His article 'Order' (1881) addressed the problem connected to the word anarchy: 'We are often reproached with having taken as our slogan the word *anarchy* which [...] in current speech, is the synonym for disorder, for chaos'.⁵³⁹ In response, his article compares the supposed 'order' of the present socio-economic and political situation of late nineteenth-century European state capitalism with the 'disorder' of anarchy. The order protected by the defenders of the status quo, Kropotkin argued, is nothing but inequality, deprivation, poverty, famine, exploitation, servitude, destruction, and death. By contrast, the 'disorder' desired by anarchists is the abolition of slavery, freedom from religious persecution, self-government, progress, and love.

Kropotkin's conception of revolution, however, would add a new dimension to the order of an anarchist society. The order of his vision of anarchy lay in the rational measurement, calculation, and distribution of the resources of the city. The abolition of the disordered, destructive chaos of the status quo would not bring order to the world in and of itself. Positive, intentional steps were required to reorder society and bring a rational form to the newly acquired resources of the social field. In 'Why Must We Occupy Ourselves with an Examination of the Ideal of a Future System?' (1873), Kropotkin's earliest projection of revolution considered how to order urban space:

All houses in the cities should become the property of the whole city. In each quarter, committees should be named for the calculation of how many apartments are needed for the inhabitants of this quarter, for the subdivision of them into unmarried, artel, and family [apartments]. All those registered in apartments for the unmarried receive them by lot from those listed in this category. The same holds for the artel and family [categories] [...]. All wares in the stores must be registered in detail and records made thereof.⁵⁴⁰

Dwelling spaces and human life would be quantitatively harmonised, with the population's need for shelter met by strict and calculated numerical precision. The

⁵³⁹ Petr Kropotkin, 'Order', in *Words of a Rebel*, pp. 76-80 (p. 76). Originally appeared in *Le Révolté* as 'L'Ordre' (1881).

⁵⁴⁰ Petr Kropotkin, 'Why Must We Occupy Ourselves with an Examination of the Ideal of a Future System?', in *Selected Writings*, pp. 47-116 (pp. 74-75). Originally published in Russian as 'Dolzhnyi-li my zaniat'sia rassmotreniem ideala budushchego stroia?' (1873).

revolution would impose a level of exactness onto the products of the city, bringing order to material reality through the detailed practices of registration and recording. The human resources of anarchy would be equally subject to the revolution's rationalisation of life. Segmented into categories of social status, the urban population would become an ordered, mapped, and thus importantly, visible social reality of types and groupings, a quality of Kropotkin's revolution made possible by his measuring and mapping techniques which I outlined in chapter two. In this effort to classify social existence, Kropotkin's revolution would initiate a statistical and numerical process of what Hacking terms 'making up people'.⁵⁴¹ Thus, the order brought to the world by Kropotkin's anarchist revolution resided not only in the rigorous mapping of the social field, but in ascribing categories to individuals by which they were able to understand their social role and status.

From his earliest images of revolution, then, Kropotkin's desire to rationalise and bestow numerical form on to reality shone through. Science was interacting with anarchism in a productive, transformative way. No longer able to map the peoples and geographic spaces of the Russian Empire, the scientific and statistical training of his youth found a field of application in the imagined reality of a post-revolutionary society. The measuring skills he learned while studying in the Corps of Pages and on military service in Siberia, coupled with the enthusiasm he developed for the application of statistics to social questions, were channelled into the political idea of revolution. Such epistemological and methodological practices would have to be at the heart of a revolution if it were to be successful. A scientific revolution could only improve social health if it was 'guided by observation, analysis, and experiment'.⁵⁴²

When Kropotkin gave his most comprehensive vision of a post-revolutionary, anarchist society in *The Conquest of Bread*, the ideas of statistical measurement, first allied to the revolutionary cause nineteen years earlier in 'Why Must We Occupy Ourselves with an Examination of the Ideal of a Future System?', remained central. The revolutionary process of bringing order to Paris, Kropotkin suggested, would depend largely on numerical mapping:

If such a revolution breaks out in France, namely, in Paris, then in twenty-four hours the commune will know what Paris has not found out yet, in spite of its

⁵⁴¹ See Hacking, 'Making Up People'.

⁵⁴² Kropotkin, *Fields, Factories and Workshops*, p. 219.

statistical committees, and what it never did find out during the siege of 1871 – the quantity of provisions it contains. In forty-eight hours millions of copies will be printed of the tables giving a sufficiently exact account of the available food, the places where it is stored, and in the means of distribution.⁵⁴³

Amidst the uncertainty and flux of urban revolution a focused, statistical scrutiny would be at work. The measurement of Paris would take place on a total scale, turning what appears at ground level to be the imperceptible labyrinths of streets into a clearly visible and well-ordered numerical representation: a map of the city in tabulated form. The once hidden provisions of the city would be unveiled by the revolution's piercing eye of empirical scientific observation. In Kropotkin's mind, the success of one of the revolution's central aspirations – providing the people with food – was intimately dependent on the objective knowledge acquired by scientific-statistical study. When the food of Paris had been measured, tabulated, and exactly represented in printed, numerical form then the political problem of hunger and starvation could be overcome.

Nothing would be left to chance during the revolution. The expropriation of land would not be a haphazard, tumultuous event fuelled by vengeful rage, but a cool, calculated, and scientific process of social rearrangement informed by statistical knowledge. In *The Conquest of Bread*, Kropotkin forecasted how the huge undertaking of expropriation will be approached and carried out:

It seems very likely that, as soon as expropriation is fairly started, groups of volunteers will spring up in every district, street and block of houses, and undertake to inquire into the number of flats and houses which are empty and of those which are overcrowded, the unwholesome slums, and the houses which are too spacious for their occupants and might well be used to house those who stifled in swarming tenements. In a few days these volunteers would have drawn up complete lists for the street and the district of all the flats, tenements, family mansions and villa residencies, all the rooms and suites of rooms, healthy and unhealthy, small and large, foetid dens and homes of luxury. Freely communicating with each other, these volunteers would soon have their statistics complete. False statistics can be manufactured in board rooms and offices, but true and exact statistics must begin with the individual and mount up from the simple to the complex.⁵⁴⁴

Kropotkin's enthusiasm for counting the quantity and quality of dwelling places (including an assessment of whether they were healthy or not) stemmed from his

⁵⁴³ Kropotkin, *The Conquest of Bread*, p. 60.

⁵⁴⁴ *Ibid.*, pp. 78-79.

understanding of society as an empirical entity requiring scientific measurement. Like the unmapped spaces of Siberia and Asia he witnessed during military service, social space that was not recorded, classified, and catalogued seemed provoking to him. What was needed to make it visible was a highly scientific, empirical study of society through direct observation and counting. The political task of the revolution to provide shelter for the urban population rested on the exactness of citywide, comprehensive statistical reports. Moreover, voluntary social counting was central to the political power of Kropotkin's anarchist revolution. As Kinna writes, 'Kropotkin's concern with the organizational aspects of power led him to suggest that the key to the state's destruction was the ability of individuals to cooperate in the construction of new ways of living.'⁵⁴⁵ Nowhere was this more apparent than in the revolutionary function of statistical mapping. Indeed, the ability of Kropotkin's revolution to defy the state came in part through its cooperative, decentralised, and non-hierarchical organisational practice of counting society. By 'acting for themselves', statistical volunteers would 'bypass the power of the state' and 'present it with a revolutionary challenge'.⁵⁴⁶

The same techniques Kropotkin used in his anarchist diagnoses are employed in the service of his anarchist remedy: the hygienic revolution. From providing descriptions of the conditions of social life under the state and capitalism, statistics now became a creative tool to map the future and give expression to the idea of social transformation. Paradoxically, however, these tactics to gain knowledge about the social field, its resources, and the human population would not differ from those employed by the state. As we saw in chapter two when I explored his response to the 1897 imperial census of the Russian Empire, Kropotkin supported the state's use of statistics to measure society. Here, we can see that his anarchist politics invested this state technology with the power to generate knowledge about a post-revolutionary society. The epistemological technologies of the state made possible Kropotkin's belief that a revolution could meet the biological and social needs of human populations.

Kropotkin did not disagree with the modern state's tendency to measure, categorise, and tabulate reality into ordered, readable forms. Despite sharing the state's scientific method of measuring society, however, Kropotkin's anarchist politics remained paramount. Only with the freely organised, voluntary, and community-led

⁵⁴⁵ Ruth Kinna, 'Kropotkin, Peter (1842-1921)', in *Encyclopedia of Power*, pp. 366-67 (p. 367).

⁵⁴⁶ Ibid.

statistical investigation initiated by an anarchist revolution could the food required to feed the people of Paris be found and distributed. In contrast to the municipal statistical committees of the state, the reports and figures produced by revolutionary statistical committees would be accurate and representative of reality. Through their ground-level, quantitative social research, anarchist volunteers could achieve an intimate knowledge of reality, a level of precision unattained by state statisticians whose work was conducted from the detachment of boardrooms.

Within this rationalised anarchist future, where statistics measure life and its resources and where living and working conditions are hygienic, the place of science will be radically altered. This is a typical feature of the nineteenth-century image of anarchy more generally and it is not unique to Kropotkin. The dissemination of scientific knowledge – the spreading of science along newly reconfigured horizontal lines of society – was particularly important to Bakunin’s theory of anarchy. He described the position of science within a centralised state as ‘the reign of *scientific intelligence*, the most aristocratic, despotic, arrogant and contemptuous of all regimes’.⁵⁴⁷ The consolidation of science in the ivory towers of government creates ‘a new class, a new hierarchy of real and pretended scientists and scholars [and] the world will be divided into a minority ruling in the name of knowledge and an immense ignorant majority’.⁵⁴⁸ Science’s exclusion deprives society of the knowledge needed to organise itself without government interference. By so doing it strengthens the state’s political claims to govern. Bakunin’s solution lay in relocating science: ‘What I preach then is, up to a certain point, *the revolt of life against science*, or rather against *government by science*, not against the destruction of science [...] but the putting of science in its rightful place’.⁵⁴⁹ To talk of science’s ‘rightful place’ is confusing in this context. The dissemination of science renders it placeless: nowhere and everywhere at the same time. No longer will its powers be restricted to one location, but scattered amongst the people: ‘Science, as a moral entity existing outside [...] social life [...] should be liquidated and widely diffused among the masses [...]. Science must in a real sense become everybody’s property’.⁵⁵⁰ Two political benefits will result from this diffusion. Society would possess the knowledge necessary to organise its own affairs,

⁵⁴⁷ Mikhail Bakunin, *Marxism, Freedom and the State*, ed. and trans. by K. J. Kenafick (London: Freedom Press, 1984), p. 38. This book is made up of reprinted passages from Bakunin’s writings that were collected and arranged by Kenafick. It was first published in 1950.

⁵⁴⁸ *Ibid.*

⁵⁴⁹ Bakunin, *Scientific Anarchism*, p. 77.

⁵⁵⁰ *Ibid.*, p. 80.

and government would be stripped of its epistemological power and claims to govern. With the dissemination of knowledge, self-rule and political freedom are achieved simultaneously.

Kropotkin was an advocate of the same process. His words in 'To the Young' echo Bakunin's:

It is no longer a question at this moment of accumulating scientific truths and discoveries. It is more important to spread the truths already gained by science, to make them enter human life, to turn them into a common domain. This must be done in such a way that the whole of humanity may be capable of assimilating and applying them, so that science will cease to be a luxury and will become the foundation for the life of all.⁵⁵¹

Knowledge dispersal should be total and far reaching. Its truths should penetrate every individual's consciousness. This is a precondition for a rationally ordered society, one that could be designed, built, and perpetuated in accordance with scientific norms.

While sharing Bakunin's call for the dissemination of science, Kropotkin's greater scientific knowledge and his keener interest in current scientific theories meant that he made appeals for more specific forms of knowledge to be dispersed. One of Kropotkin's most illuminating calls for scientific knowledge to enter the 'common domain' came in *In Russian and French Prisons*: 'The time, we hope, is not too far distant', Kropotkin stated, 'when the noble ideas which have inspired Griesinger, Krafft-Ebbing, Despine, and some of the modern Italian criminologists, like [...] Ferri, will become the property of the general public'.⁵⁵² In Kropotkin's thought, the anarchist theme of knowledge dissemination serves to scatter ideas from nineteenth-century criminal psychiatry throughout society. He envisaged the wide dissemination of Griesinger's medical understanding of insanity, Krafft-Ebing's view of sexual deviance as mental disease, Despine's conception of immorality as moral insanity, and Ferri's approach to crime as being the result of an interaction between body and environment. In short, Kropotkin wanted expert knowledge about biosocial deviance to become a part of the epistemological basis of social anarchy.

Kropotkin's call for the dissemination of these scientific ideas was made in the service of anarchist politics. Once dispersed, prominent strands of nineteenth-century criminal psychiatry would not come to govern social existence technocratically. On the

⁵⁵¹ Kropotkin, 'To the Young', p. 48.

⁵⁵² Kropotkin, *Prisons*, p. 349. Once again, Kropotkin misspells Krafft-Ebing's name.

contrary, as ‘the property of the general public’, as Kropotkin put it in the above quotation, a biomedical perspective of deviance would strengthen society’s capacity to organise its own affairs. Equipped with this expert knowledge, communities could make their own informed decisions about crime, madness, and sexual aberration. Moreover, by disseminating a medical approach to deviance, Kropotkin’s anarchism subverts the power of the state to punish its citizens. How to respond to anti-sociality, violence, and moral transgression would no longer be dictated to society by centralised political authority. With the idea of sin eradicated and replaced by a medical discourse about sickness, society’s role would not be to discipline, but to cure and make healthy the afflicted individuals. Here, Kropotkin is reformulating the two political benefits – political freedom and self-rule – that Bakunin hoped to secure through the recasting of science: owned collectively by society, criminal psychiatry makes obsolete the state’s claim to punish and places the responsibility for treatment in the hands of the people.

I have shown how Kropotkin’s absorption of scientific knowledge and methods transformed key elements of his anarchist politics. It shifted the focus of conventional strands of the anarchist diagnosis and made the notion of an anarchist remedy literal. I have also argued, however, that anarchism was not inactive in this relationship. Kropotkin’s political ambitions were strengthened, not diluted, through their meeting with science. My analysis has not presented Kropotkin as a crude nineteenth-century positivist to whom all political questions were rendered irrelevant in the face of an administrative scientism. Instead, I have represented him as a political thinker who drew on prevalent scientific epistemologies and methodologies in order to develop, transform, and add vitality to a tradition of anarchist thought. This is particularly evident in my reading of Kropotkin’s conception of revolution. Science did not simply promise to Kropotkin, or allow him to foresee with optimism, the inevitability of social and moral progress that would rule out the necessity of mass revolutionary action. Rather, Kropotkin’s biomedical understanding of the threats posed by the state and capitalism made a hygienic revolution essential for humanity’s survival. In this sense, my analysis of science in Kropotkin’s anarchism, unlike Crowder’s, ‘sits well’ with his theory of revolution: biomedical science did not reduce the importance of spontaneity,

but maximised it.⁵⁵³ This thesis has argued that for all Kropotkin's faith in scientific thought, he did not think that moral progress would come about as a result of a 'passive evolutionary process'.⁵⁵⁴ Quite the reverse: his conception of environmentally driven evolutionary change made the revolutionary modification of surroundings vital for humanity's moral improvement. As a form of social hygiene, revolution would act literally as a medical retaliation against the illnesses caused by the state and capitalism. In short, Kropotkin's biomedical, scientific thinking raised the stakes of anarchist revolution to new heights.

⁵⁵³ For Crowder, Kropotkin's scientific thinking does not raise the importance of revolution and spontaneous revolt, as I argue it does, but promises an inevitable 'universal convergence of moral judgement that will ultimately make governments [...] unnecessary'. Crowder, 'A Reply to Kinna', p. 150. Kinna's review of Crowder's *Classical Anarchism* points to the fact that spontaneity remains in Kropotkin's thought not in spite of, but as a consequence of his scientific idea of mutual aid. Ruth Kinna, 'George Crowder's Classical Anarchism and the Uniqueness of Kropotkin's Thought', *Anarchist Studies*, 1, 1 (1993), 51-58.

⁵⁵⁴ Kinna, 'George Crowder's Classical Anarchism and the Uniqueness of Kropotkin's Thought', p. 56. Matthew S. Adams makes a similar point. He argues that Kropotkin's use of evolution did not vitiate the need for revolutionary activity, but was compatible with a theory of revolution. Adams claims that Kropotkin's view of history did not represent a narrative of fatalistic progression, but one of progress *and* reaction in which revolution is essential. Matthew S. Adams, 'Kropotkin: evolution, revolutionary change and the end of history', *Anarchist Studies*, 1, 19 (2011), 56-81.

Conclusion: The Ambivalence of Kropotkin's Anarchism

In the preface to the second edition of *Russian Literature: Ideals and Realities*, Kropotkin introduced an ambivalence he saw at the heart of nineteenth-century Russian literature. The 'Western reader' will initially be struck by its hopelessness and misery. They will be impressed by 'the absence from it of the joy of life, the happiness of existence'. Kropotkin identified a 'striking note of sadness' that unified the work of Russian poets and novelists. Yet, alongside this distinct melancholy, he was keen to point out to his Western reader another, 'even more characteristic' feature. While being sorrowful, it is at the same time alive with hope. It is driven by a 'deeply rooted inner force' that stops at no obstacle and can never be extinguished. Confidently it pursues 'higher ideals, the higher aspirations of mankind'. Kropotkin's characterisation of nineteenth-century Russian literature cantered on a contradiction: amidst its 'deep traces of sadness', there is a 'real happiness'.⁵⁵⁵

It is apt that Kropotkin should cast such a view of nineteenth-century Russian writers, because, I think, a similar ambivalence was at work in his thought. The delicate balance between despair and hope he noticed in Alexandr Pushkin (1799-1837) and Nikolai Gogol (1809-1852), for example, I consider to be a striking feature of his own writings about the world. Kropotkin's energy was continually divided between critiquing the status quo and imagining its improvement. His focus shifted back and forth from a fear of a decayed past and present to a hope of a healthy future. The strength with which he condemned humanity's desperate state of existence is matched by his faith in its possible salvation. Kropotkin's ambivalence is common to his tendency to think in terms of binaries: to search for meaning in the world through the confrontation of contradictory ideas and in the arrangement of seemingly insurmountable oppositions. His political philosophy made sense within his ambiguous statement that 'only those who know how to hate know how to love'.⁵⁵⁶ He judged the modern age as a place full of horror, a place he undoubtedly hated, but one that was pregnant with an idea he certainly loved: the prospect of a better future.

Kropotkin explained the ambivalence of nineteenth-century Russian literature not as a specific feature of the mystical Slavonic soul, but as a consequence of many of the authors' experience of persecution at the hands of the Tsarist state. Kropotkin's

⁵⁵⁵ Petr Kropotkin, 'Preface to the Second Edition' [1916], in *Russian Literature*, pp. v-ix (pp. v-vi).

⁵⁵⁶ Kropotkin, 'Anarchist Morality', p. 103.

precarious oscillation between pessimism and optimism, however, cannot be accurately accounted for by turning to his experiences of imprisonment. What stimulated his ambivalence, I believe, was the scientific thought he absorbed into his anarchist project. As I have shown, biomedical knowledge fuelled Kropotkin's pressing anxiety about the sickened condition of modern society as well as his belief in the possibility of purifying it through hygienic revolution. His panic about the biological degeneration of the human species was informed by the truth claims of evolutionary science, ideas which simultaneously promised him the potential for its regeneration. And his fears about increased levels of moral depravity, epidemics of madness, and the danger of mental insanity had their roots in theories of criminal psychiatry, whose scientific assessment of deviance also gave him the hope to conceive of a world without crime.

The tensions between apocalyptic despair and unbreakable hope we find in Kropotkin's thought are indicative of the ways in which scholars have described the modern experience. In his study of the meeting of biomedical science and politics in late Imperial Russia and the Soviet Union, Daniel Beer argues that 'science played a key role in defining both the optimism and the pessimism of modernity':

On the one hand it was constantly 'discovering' – naming, defining, measuring, quantifying, investigating – new problems and threats. On the other hand, and on the basis of such codification of each, science was also constantly 'identifying' new solutions to those problems, new fields of inquiry and expertise and new technologies to contain and resolve them.⁵⁵⁷

This diagnostic-remedial tension encapsulates the way in which Kropotkin thought about the qualities of his scientific anarchist project. His absorption of science produced a brand of anarchism that flirted continually, but uneasily, between problem and solution. The violent oscillations between progress and decline we find in Kropotkin's thought were products of science's perpetual need to conjure the forces against which it could unleash its power.

Kropotkin experienced his age in other unsettling ways. His writing is stretched by competing interpretations of the world. On the one hand, he saw a clear vision of rapid progress – technological, scientific – that was easily identifiable and existed in

⁵⁵⁷ Beer, *Renovating Russia*, pp. 6-7.

material reality. In ‘The Scientific Basis of Anarchy’, we find one of Kropotkin’s quintessential narratives of late nineteenth-century civilisational achievement:

Let us take a civilized country. The forests have been cleared, the swamps drained. Thousands of roads and railways intersect it in all directions; the rivers have been rendered navigable, and the seaports are of easy access. Canals connect the seas. The rocks have been pierced by deep shafts; thousands of manufactures cover the land. Science has taught men how to use the energy of nature for the satisfaction for his needs. Cities have slowly grown in the long run of ages, and treasures of science and art are accumulated in these centres of civilization.⁵⁵⁸

This type of image is a neat example of what Marshall Berman describes as the ‘highly developed, differentiated and dynamic new landscape’ of the nineteenth century in which modern experience took place.⁵⁵⁹ Kropotkin was certainly in tune with the industrial rhythm of the late nineteenth century and its conquests over nature. He expressed optimism to his readers about the rapidly changing face of the world’s surface.

On the other hand, however, Kropotkin’s writings convey an experience of an age that – in Berman’s terms – could ‘provide everything except solidity and stability’.⁵⁶⁰ There is an uncertainty to Kropotkin’s outlook, a tendency to peer below the neatly ordered face of reality. Underneath the surface of civilisation, where industry and science made their obvious marks on physical nature, were more murky, less distinct features of the nineteenth century that challenged the illuminating light of progress. The torch of rationality was lit, but shone in a world of darkness. There were spells in this world, cast by wizards and sorcerers who, with ‘the command of all sorts of evil powers’, prowl ‘about at night, pursuing [their] wicked designs under the cover of darkness’.⁵⁶¹ Modern life involved a struggle against deception, a constant fight to see through disguise and identify which elements of reality were façade and which genuine. Illusion was a constant challenge. Modernity’s constructive drive, by which great cities were built and feats of engineering – bridges, dams, tunnels, railways, factories – adorned both urban and rural landscapes, was accompanied by a process of subtle erosion: ‘All that was good, great, generous or independent in man, little by

⁵⁵⁸ Kropotkin, ‘The Scientific Basis of Anarchy’, p. 120.

⁵⁵⁹ Marshall Berman, *All That Is Solid Melts Into Air: The Experience of Modernity* (London and New York: Verso, 1983), p. 18.

⁵⁶⁰ *Ibid.*, p. 19.

⁵⁶¹ Kropotkin, *Ethics*, p. 60.

little becomes moss-grown; rusts like a disused knife'.⁵⁶² Beneath the surface of industrial advancement and progress lurked a realm of duplicity where 'a lie becomes a virtue, a platitude a duty'.⁵⁶³ Nothing was what it seemed in Kropotkin's vision of the modern environment.

Even Kropotkin's view of the universe is characterised by ambivalence. As he wrote in *Modern Science and Anarchism*, his anarchism looked out to the universe through the interpretive gaze of the natural sciences:

Anarchism is a conception of the Universe based on the mechanical interpretation of phenomena [...]. Its method is that of the natural sciences, and every conclusion it comes to must be verified by this method if it pretends to be scientific. Its tendency is to work out a synthetic philosophy which will take in all facts of Nature.⁵⁶⁴

Kropotkin's basic ontology, a view of what is actually 'out there' in the world, owed its elaboration to this mechanistic, regularised, and rational scientific outlook. Such a framework, however, did not produce a view of the universe that was ordered or coherent, but one of chaos. Speaking of astronomy in 'Anarchism: Its Philosophy and Ideal', he claimed that modern science had produced a new conception of the universe:

After having fixed all their attention on the sun and the large planets, astronomers are beginning to study the infinitely small ones that people the universe. And they discover that the interplanetary and interstellar spaces are peopled and crossed in all imaginable directions by little swarms of matter, invisible, infinitely small [...]. These infinitely tiny bodies [...] dash through space in all directions with such giddy swiftness, [...] clash with one another, agglomerate, disintegrate, everywhere and always [...]. Soon universal gravitation itself will be but the result of all the disordered and incoherent movement of these infinitely small bodies – of oscillations of atoms that manifest themselves in all possible directions. Thus the center, the origin of force, formerly transferred from the earth to the sun, now turns out to be scattered and disseminated. It is everywhere and nowhere.⁵⁶⁵

Leaving aside the anarchist imagery of this decentralised reality, where force and power are disseminated amongst its constituent parts, Kropotkin's view of the universe is one of perplexing flux. The physical world was not how it appeared to the naked

⁵⁶² Kropotkin, 'Anarchist Morality', p. 81.

⁵⁶³ Ibid.

⁵⁶⁴ Kropotkin, *Modern Science*, p. 38.

⁵⁶⁵ Kropotkin, 'Anarchism: Its Philosophy and Ideal', p. 117.

eye, but rather a place of disorder. It was a theatre of imperceptible clashes, of dizzying speed and velocity. Kropotkin experienced the entanglement of reality, its incoherency and disconnectedness. He felt its disintegration and thought of the tumultuous crisscrossing of its parts. Above all, Kropotkin's scientific gaze on reality produced a world of contradiction: 'Harmony [...] results from the disorderly and incoherent movements of numberless hosts of matter'.⁵⁶⁶ The order of the universe is explained as a consequence of hidden chaos under the surface. Fragmentation is the basis of the world's unity.

Kropotkin's writing represents an experience of the modern age that is caught between certainty and doubt. When he contemplated the relationship between knowledge and power, this experience was particularly strong. It was a question that occupied his mind for over half a century. 'The Ethical Need of the Present Day' contains his ambivalent conclusion:

Modern Science has thus achieved a double aim. On the one side it has given to man a very valuable lesson of modesty. It has taught him to consider himself as but an infinitesimally small particle of that immense whole – the universe. It has driven him out of his narrow, egotistical seclusion, and has dissipated the self-conceit under which he considered himself the centre of the universe and the object of a special attention in it [...]. But at the same time science has taught man how powerful mankind is in its progressive march; and it has given him the means to enlist in his service the unlimited energies of Nature.⁵⁶⁷

At once humbling and exalting, nineteenth-century scientific knowledge had brought about an oscillating experience for human beings. It had reduced them to material creatures, removing from their lives the comfort and pride of divinity, while simultaneously raising them as the new masters of the universe. Owen Chadwick portrays this peculiar feature of the experience of nineteenth-century science as a contradiction, one 'lowering man to the dust by showing him to be nothing but animal, while lifting him to the skies and singing his greatness as the ruler of the world'.⁵⁶⁸ This was a contradiction, but an indispensable contradiction for a man of transformative politics. To realise their ultimate power humans had to be lowered to

⁵⁶⁶ Ibid., p. 118.

⁵⁶⁷ Kropotkin, 'The Ethical Need of the Present Day', p. 209.

⁵⁶⁸ Owen Chadwick, *The Secularization of the European Mind in the Nineteenth Century* (Cambridge: Cambridge University Press, 1975), p. 171.

the ground, and with nature as the object of science, they too had to be turned into something natural before being understood, improved, and elevated.

Through his explorations of this relationship between knowledge and power, Kropotkin exposed a further ambivalence in his thought arising from the connection between modern science and politics. In designating human beings as something natural, revealing what Kropotkin called ‘Man’s oneness with Nature’,⁵⁶⁹ scientific knowledge had rendered them more powerful than ever, powerful over themselves as part of nature. For Kropotkin believed that it was science’s two interdependent qualities – knowledge and control – which together empowered anarchist political thought with the capacity to regenerate society and improve social health. First of all, science was necessary ‘to help [human beings] to *know* Nature’, that is, to understand humanity in all its details and complexity.⁵⁷⁰ This epistemological insight allowed for the next stage in the process of anarchist political change, ‘to utilize [nature’s] forces’, that is, to instrumentalise and to tame it so as to make it subservient to human artistry and design.⁵⁷¹ And being one with nature, that is, utterly part of the natural world, humanity was subject to its own scientific ambitions to manage, order, and control life. Kropotkin’s idea of anarchism revolves around this circular, contradictory pattern of mastery and subjection. Science’s connection to anarchism brought into existence a humanity that vacillated from a position of command to a state of obedience, a power whose authority derived from knowledge of its own weakness, fragility, and malleability. According to Kropotkin, the success of anarchism would be proportional to the intensity with which humanity felt this contradiction. The political goal of anarchism – ‘increasing [...] the welfare of societies’ – was dependent on the extent to which ‘concrete scientific knowledge’ could extend ‘the power of man over Nature’.⁵⁷² Anarchism’s realisation required the complete extension of humanity’s power over itself. To achieve this, anarchist politics would have to draw on science and science would have to be transformed by anarchist politics.

⁵⁶⁹ Kropotkin, *Memoirs*, p. 117.

⁵⁷⁰ Kropotkin, *Ethics*, p. 249.

⁵⁷¹ *Ibid.*

⁵⁷² *Ibid.*

Bibliography

Works by Kropotkin

‘Anarchism’ [1910], in *The Conquest of Bread and Other Writings*, ed. by Marshall Shatz (Cambridge: Cambridge University Press, 1995), pp. 233-47

‘Anarchism: Its Philosophy and Ideal’ [1896], in *Kropotkin’s Revolutionary Pamphlets: A Collection of Writings by Peter Kropotkin*, ed. by Roger N. Baldwin (London: Dover Publications, 1970), pp. 115-44

‘Anarchist Morality’ [1891], in *Kropotkin’s Revolutionary Pamphlets*, pp. 80-113

‘Author’s Preface to the Second Edition’ [1912], in *Fields, Factories and Workshops Tomorrow*, ed. by Colin Ward (London: George Allen and Unwin, 1974), pp. 19-21

‘The Coming Revolution’ [1880], in *Words of a Rebel*, trans. by George Woodcock (Montréal and New York: Black Rose Books, 1992), pp. 34-38

‘The Commune’ [1880], in *Words of a Rebel*, pp. 81-89

The Conquest of Bread [1892] (Cambridge: Cambridge University Press, 1995)

‘The Ethical Need of the Present Day’, *The Nineteenth Century and After*, 330, 56 (1904), 207-26

Ethics: Origin and Development [1922], trans. by Louis S. Friedland and Joseph R. Piroshnikoff (Bristol: Thoemmes Press, 1993)

‘Expropriation’ [1882], in *Words of a Rebel*, pp. 205-22

Fields, Factories and Workshops [1899] (London: Swan Sonnenschein and Co., 1901)

The Great French Revolution 1789-1793 [1909], trans. by N. F. Dryhurst (London: Orbach and Chambers, 1971)

‘The Great Siberian Railway’, *The Geographical Journal*, 2, 5 (1895), 146-54

‘The Inevitability of Revolution’ [1882], in *Words of a Rebel*, pp. 29-33

‘Inherited Variation in Animals’ [1915], in *Evolution and Environment*, ed. by George Woodcock (Montréal, New York, and London: Black Rose Books, 1995), pp. 223-42

‘Law and Authority’ [1882], in *Words of a Rebel*, pp. 145-64

‘Letter to Lenin’ [1920], in *Selected Writings on Anarchism and Revolution*, ed. by Martin A. Miller (Cambridge, Massachusetts, and London: The M.I.T. Press, 1970), pp. 335-37

Memoirs of a Revolutionist [1899] (New York: Dover Publications, 2010)

Modern Science and Anarchism [1901] (London: Freedom Press, 1923)

Mutual Aid: A Factor of Evolution [1902], ed. by Paul Avrich (London: Allen Lane and The Penguin Press, 1972)

‘Order’ [1881], in *Words of a Rebel*, pp. 76-80

‘The Paris Commune’ [1880], in *Words of a Rebel*, pp. 90-103

‘The Permanence of Society after the Revolution’ [1890], in *Act For Yourselves: Articles from Freedom 1886-1907*, ed. by Nicolas Walter and Heiner Becker (London: Freedom Press, 1988), pp. 87-91

‘The Population of Russia’ *The Geographical Journal*, 2, 10 (1897), 196-202

‘The Reformed School’, *Mother Earth* (August, 1908), 259-62

‘The Response of Animals to Their Environment’ [1910], in *Evolution and Environment*, pp. 159-83

‘Revolution and Famine’ [1887], in *Act For Yourselves*, pp. 66-70

‘Russian Explorations in Manchuria’, *The Geographical Journal*, 1, 11 (1898), 63-65

In Russian and French Prisons [1887] (Montréal and New York: Black Rose Books, 1991)

Russian Literature: Ideals and Realities [1905], 2nd edn (London: Duckworth and Co., 1916)

‘The Scientific Basis of Anarchy’ [1887], in *Anarchism: Its Philosophy and Scientific Basis As Defined by Some of Its Apostles*, ed. by Albert R. Parsons (Chicago: Mrs. A. R. Parsons, 1887), pp. 111-23

‘The Situation Today’ [1879], in *Words of a Rebel*, pp. 19-23

‘The Spirit of Revolt’ [1881], in *Words of a Rebel*, pp. 183-99

‘The State: Its Historic Role’ [1896], in *Selected Writings*, pp. 211-64

‘The Sterilization of the Unfit’ [1912], in *Anarchy!: An Anthology of Emma Goldman’s Mother Earth*, ed. by Peter Glassgold (Berkley: Counterpoint, 2012), pp. 120-24

The Terror in Russia: An Appeal to the British Nation (London: Methuen & Co., 1909)

‘The Theory of Evolution and Mutual Aid’ [1910], in *Evolution and Environment*, pp. 159-83

‘To the Young’ [1880], in *Words of a Rebel*, pp. 44-63

‘La Verité sur les executions en Russie’ [1881], quoted in George Woodcock and Ivan Avakumovic, *The Anarchist Prince: A Biographical Study of Peter Kropotkin* (London and New York: T.V Boardman, 1950)

Wars and Capitalism [1913] (London: Freedom Press, 1914)

‘What Geography Ought to Be’ [1885], in *Human Geography: An Essential Anthology*, ed. by John Agnew, David N. Livingstone, and Alisdair Rogers (Cambridge and Massachusetts: Blackwell Publishers, 1996), pp. 139-54

‘Why Must We Occupy Ourselves with an Examination of the Ideal of a Future System?’ [1873], in *Selected Writings*, pp. 47-116

Primary Works

Bakunin, Mikhail, *Bakunin on Anarchy: Selected Works by the Activist-Founder of World Anarchism*, ed. by Sam Dolgoff (London: George Allen and Unwin Ltd., 1973)

— *Marxism, Freedom and the State* (London: Freedom Press, 1984)

— *The Political Philosophy of Bakunin: Scientific Anarchism*, ed. by G. P. Maximov (London: The Free Press of Glencoe, 1953)

— *Statism and Anarchy* [1873], ed. and trans. by Marshall S. Shatz (Cambridge: Cambridge University Press, 2005)

Bellegarrigue, Anselme, ‘Anarchy is Order’ [1850], in *Anarchism: A Documentary History of Libertarian Ideas*, ed. by Robert Graham, 3 vols (Montréal, New York, and London: Black Rose Books, 2005), I, pp. 58-60

Berkman, Alexandr, Emma Goldman, Errico Malatesta, et al, ‘International Anarchist Manifesto Against War’ [1915], in *Anarchism*, pp. 289-91

Cafiero, Carlo, 'Action' [1880], in *Anarchism*, pp. 152-53

Chadwick, Edwin, 'An Inquiry into the Sanitary Condition of the Labouring Population of Great Britain' [1842], in *Literature and Science in the Nineteenth Century: An Anthology*, ed. by Laura Otis (Oxford: Oxford University Press, 2002), pp. 167-71

Déjacque, Joseph, 'The Revolutionary Question' [1854], in *Anarchism*, pp. 60-63

Despine, Prosper, 'The Psychological State of Criminals' [1868], in *The Origins of Criminology: A Reader*, ed. by Nicole Rafter (New York: Routledge, 2009), pp. 83-84

Eltzbacher, Paul, *Anarchism: Exponents of the Anarchist Philosophy* [1900], ed. by James J. Martin, trans. by Steven T. Byington (New York: Chip's Bookshop Booksellers and Publishers, 1959)

Ferri, Enrico, 'The Data of Criminal Statistics' [1884], in *The Origins of Criminology*, pp. 295-99, pp. 330-36

— *The Positive School of Criminology* [1901], trans. by Ernest Untermann (Chicago: Charles H. Kerr and Company, 1913)

Godwin, William, *Enquiry Concerning Political Justice and Its Influence on Modern Morals and Happiness* [1793] (Harmondsworth: Penguin Books Inc., 1976)

Goldman, Emma, 'Anarchism: What It Really Stands For' [1910], in *Anarchism and Other Essays* (New York: Dover Publications, 1969), pp. 47-67

— 'Preparedness: The Road to Universal Slaughter' [1915], in *Anarchism*, pp. 291-94

Griesinger, Wilhelm, *Mental Pathology and Therapeutics* [1845], trans. by C. Lockhart Robertson and James Rutherford, 2nd edn (London: The New Sydenham Society, 1867)

Hake, Alfred Egmont, *Regeneration: A Reply to Max Nordau* (Westminster: Archibald Constable and Co., 1895)

Hobbes, Thomas, *Leviathan* [1651], ed. by Richard Tuck (Cambridge: Cambridge University Press, 1991)

Huxley, Thomas H., 'Address on behalf of the National Association for the promotion of technical education' [1887], in Huxley, *Science and Education* (London and New York: Macmillan and Co., 1902), pp. 427-51

— 'The Connection of the Biological Sciences with Medicine' [1881], in *Science and Education*, pp. 347-73

— 'Evolution and Ethics: Prolegomena' [1894], in Huxley, *Evolution and Ethics and Other Essays* (Honolulu, Hawaii: University Press of the Pacific, 2002), pp. 1-45

— 'The Struggle for Existence in Human Society' [1888], in *Evolution and Ethics and Other Essays*, pp. 195-236

Jünger, Ernst, *Der Kampf als inneres Erlebnis* [1926], quoted in Tim Beasley-Murray, *Mikhail Bakhtin and Walter Benjamin: Experience and Form* (Basingstoke and New York: Palgrave Macmillan, 2007)

Kant, Immanuel, 'Idea for a Universal History with a Cosmopolitan Purpose' [1784], in *Political Writings*, ed. by Hans Reiss, trans. by H. B. Nisbet (Cambridge: Cambridge University Press, 2001), pp. 41-53

Krafft-Ebing, Richard von, *Psychopathia Sexualis with special reference to the Antipathetic Sexual Instinct: A Medico-Forensic Study* [1886], trans. by F. J. Rebman, 12th edn (New York: Physicians and Surgeon's Book Company, 1934)

Lamarck, Jean-Baptiste, *Zoological Philosophy: An Exposition with Regard to the Natural History of Animals* [1809], trans. by Hugh Elliot (London: Macmillan and Co., 1914)

Lavrov, Petr, 'Historical Letters' [1870], in *Russian Philosophy*, ed. by James M. Edie, James P. Scanlan, and Mary-Barbara Zeldin, 3 vols (Chicago: Quadrangle Books, 1965), II, pp. 123-69

Le Bon, Gustave, *Psychology of Crowds* [1895], ed. by Anna Cuffaro and David Kauders (Great Britain: Sparkling Books, [n.d.])

Locke, John, *Two Treatises of Government* [1689], ed. by Peter Laslett (Cambridge: Cambridge University Press, 1960)

Lombroso, Cesare, *Criminal Man* [1876], trans. by Mary Gibson and Nicole Hahn Rafter (Durham and London: Duke University Press, 2006)

— 'Illustrative Studies in Criminal Anthropology: The Physiognomy of the Anarchists', *The Monist*, 3, 1 (1891), 336-43

Machiavelli, Niccolò, *The Prince* [1532], ed. by Quentin Skinner (Cambridge: Cambridge University Press, 1988)

Malatesta, Errico, 'Anarchist Have Forgotten Their Principles' [1914], in *Anarchism*, pp. 286-89

— 'The Duties of the Present Hour' [1894], in *Anarchism*, pp. 181-83

— 'Violence as a Social Factor' [1895], in *Anarchism* pp. 160-63

Marinetti, F. T., *Critical Writings*, ed. by Günter Berghaus, trans. by Doug Thompson (New York: Farrar, Straus, and Giroux, 2006)

Marx, Karl, 'The Civil War in France' [1871], in *Selected Writings*, ed. by David McLellan (Oxford: Oxford University Press, 2011), pp. 584-96

Maudsley, Henry, 'An Address on Medical Psychology, Delivered at The Opening of the Psychological Section At the Annual Meeting of the British Medical Association, In Birmingham, August 1872', *The British Medical Journal*, 606, 2 (1872), 163-67

— 'The Borderland' [1874], in *The Origins of Criminology*, pp. 104-13

Mikhailovsii, Nikolai, 'What is Progress?' [1869], in *Russian Philosophy*, pp. 177-87

Mill, John Stuart, *The Logic of the Moral Sciences* [1843] (London: Gerald Duckworth and Co., 1988)

— *On Liberty and Other Essays* ed. by John Gray (Oxford: Oxford University Press, 1998)

Nordau, Max, *Degeneration* [1892] (New York: Howard Ferting, 1968)

Proudhon, Pierre-Joseph, *The General Idea of the Revolution in the Nineteenth Century* [1851], trans. by John Beverley Robinson (London: Pluto Press, 1989)

— *Selected Writings of Pierre-Joseph Proudhon*, ed. by Stewart Edwards, trans. by Elizabeth Fraser (London: Macmillan and Co., 1969)

— *The System of Economic Contradictions, or, The Philosophy of Poverty* [1846], in *Anarchism*, pp. 38-42

— *What is Property?* [1840], ed. by Donald R. Kelly and Bonnie G. Smith (Cambridge: Cambridge University Press, 1993)

Quetelet, Adolphe, 'Notice on Periodical Phenomena', *Journal of the Statistical Society of London*, 2, 5 (1842), 208-09

— 'Research on the Propensity of Crime at Different Ages' [1831], quoted in Piers Beirne, 'Adolphe Quetelet and the Origins of Positivist Criminology', *The American Journal of Sociology*, 5, 92 (1987)

Reclus, Élisée, 'Evolution and Revolution' [1891], in *Anarchism*, pp. 268-71

Romanes, George John, 'Mental Evolution in Man' [1888], in *Literature and Science in the Nineteenth Century*, pp. 279-82

Rousseau, Jean-Jacques, 'Discourse on the Sciences and Arts or First Discourse' [1750], in *The Discourses and other early political writings*, ed. by Victor Gourevitch (Cambridge: Cambridge University Press, 2004), pp. 1-28

— 'Letter to M. de Franquières' [1769], in *The Social Contract and other later political writings* (Cambridge: Cambridge University Press, 1997), pp. 272-85

— *The Social Contract* [1762] (Cambridge: Cambridge University Press, 1997)

Russell, Bertrand, *Roads To Freedom: Socialism, Anarchism, and Syndicalism* [1918] (London: Allen Lane and Unwin, 1933)

Taine, Hippolyte, *Notes on Paris* [1867], trans. by John Austin Stevens (New York: Henry Holt and Co., 1875)

— *The Origins of Contemporary France: The Ancient Regime; The Revolution; The Modern Regime: Selected Chapters* [1875-93], ed. by Edward T. Gargan (Chicago and London: University of Chicago Press, 1974)

Tarde, Gabriel, *L'Opinion et la foule* [1901], quoted in Serge Moscovici, *The Age of the Crowd: A Historical Treatise on Mass Psychology*, trans. by J. C. Whitehouse (Cambridge: Cambridge University Press, 1985)

Thomson, J. Bruce, 'The Hereditary Nature of Crime' [1869], in *The Origins of Criminology*, pp. 163-67

Wilde, Oscar, *De Profundis* [1905] (London: Penguin, 1986)

Other Works

Adams, Matthew S., 'Kropotkin: evolution, revolutionary change and the end of history', *Anarchist Studies*, 1, 19 (2011), 56-81

Ahrens Dorf, P., 'The fear of death and the longing for immortality: Hobbes and Thucydides on human nature and the problem of anarchy', *American Political Science Review*, 3, 94 (2000), 579-93

Avrich, Paul, 'Editor's Introduction', in Petr Kropotkin, *The Conquest of Bread*, ed. by Avrich (London: Allen Lane The Penguin Press, 1972), pp. 1-24

— 'Editor's Introduction', in *Mutual Aid*, pp. 1-10

de Baecque, Antoine, *The Body Politic: Corporeal Metaphor in Revolutionary France, 1770-1800*, trans. by Charlotte Mandell (Stanford, California: Stanford University Press, 1997)

Baldwin, Roger N., 'Introduction', in *Kropotkin's Revolutionary Pamphlets*, pp. 1-12

Barnes, David B., *The Great Stink of Paris and the Nineteenth-Century Struggle against Filth and Germs* (Baltimore: The John Hopkins University Press, 2006)

Barrows, Susanna, *Distorting Mirrors: Visions of the Crowd in Late Nineteenth-Century France* (New Haven and London: Yale University Press, 1981)

Bauman, Zygmunt, *Legislators and Interpreters: On modernity, post-modernity and intellectuals* (Cambridge: Polity Press, 1995)

Becker, Heiner, 'Kropotkin as Historian of the French Revolution', *The Raven*, 7, 2 (1989), 225-31

Beer, Daniel, *Renovating Russia: The Human Sciences and the Fate of Liberal Modernity, 1880-1930*, (Ithaca and London: Cornell University Press, 2008)

- Beirne, Piers, 'Adolphe Quetelet and the Origins of Positivist Criminology', 1140-69
- Berman, Marshall, *All That Is Solid Melts Into Air: The Experience of Modernity* (London and New York: Verso, 1983)
- Billington, James H., *Mikhailovsky and Russian Populism* (Oxford: Clarendon Press, 1958)
- Burkhardt, Jr., Richard W., *The Spirit of System: Lamarck and Evolutionary Biology* (Cambridge, Massachusetts, and London: Harvard University Press, 1995)
- Cahm, Caroline, *Kropotkin and the Rise of Revolutionary Anarchism 1872-1886* (New York and Cambridge: Cambridge University Press, 1989)
- Carlisle, Robert B., 'The Birth of Technocracy: Science, Society, and Saint-Simonians', *Journal of the History of Ideas*, 3, 35 (1974), 445-64
- Carlson, Eric T., 'Medicine and Degeneration: Theory and Praxis', in *Degeneration: The Dark Side of Progress*, ed. by J. Edward Chamberlin and Sander L. Gilman (New York: Columbia University Press, 1985), pp. 121-44
- Chadwick, Owen, *The Secularization of the European Mind in the Nineteenth Century* (Cambridge: Cambridge University Press, 1975)
- Chomsky, Noam, 'Introduction', in Daniel Guérin, *Anarchism From Theory to Practice*, trans. Mary Klopfer (New York and London: Monthly Review Press, 1970), pp. vii-xx
- Clark, John P., *The Philosophical Anarchism of William Godwin* (Princeton, New Jersey: Princeton University Press, 1977)
- Clark, John P. and Camille Martin, *Anarchy, Geography, Modernity: The Radical Social Thought of Elisée Reclus*, ed. by Clark and Martin (Lanham, Maryland: Lexington Books, 2004)

Cleminson, Richard, *Anarchism, Science and Sex: Eugenics in Eastern Spain, 1900-1937* (Bern: Peter Lang, 2000)

— ‘Anarchists for Health: Spanish Anarchism and Health Reform in the 1930s. Part 1: Anarchism, Neo-Malthusianism, Eugenics and Concepts of Health’, *Health Care Analysis*, 3 (1995), 61-67

Cohen, Joshua, ‘Structure, Choice, and Legitimacy: Locke’s Theory of the State’, *Philosophy and Public Affairs*, 4, 15 (1986), 301-24

Cohn, Jesse S., *Anarchism and the Crisis of Representation: Hermeneutics, Aesthetics, Politics* (Selinsgrove: Susquehanna University Press, 2010)

Cole, Joshua, ‘The chaos of particular facts: statistics, medicine and the social body in early 19th-century France’, *History of the Human Sciences*, 3, 7 (1994), 1-27

Comfort, Alex, ‘Preface’, in Harold Barclay, *People Without Government: An Anthropology of Anarchism* (London: Kahn and Averill, 1990), pp. 7-9

Crowder, George, *Classical Anarchism: The Political Thought of Godwin, Proudhon, Bakunin and Kropotkin* (Oxford: Clarendon Press, 1991)

— ‘Classical Anarchism: A Reply to Kinna’, *Anarchist Studies*, 2, 1 (1993), 147-53

Daly, Jonathan, ‘Russian Punishment in the European Mirror’, in *Russia in the European Context 1789-1914: A Member of the Family*, ed. by Susan P. McCaffray and Michael Melancon (New York and Basingstoke: Palgrave Macmillan, 2005), pp. 161-88

Davies, Steven, ‘Edwin Chadwick and the Genesis of the English Welfare State’, *Critical Review: A Journal of Politics and Society*, 4, 4 (1990), 523-36

Erickson, Edward J., 'Punishing the Mad Bomber: Questions of Moral Responsibility in the Trials of French Anarchist Terrorists, 1886-1897', *French History*, 1, 22 (2008), 51-73

Fleming, Marie, 'Propaganda by the deed: Terrorism and anarchist theory in late nineteenth-century Europe', *Terrorism*, 4 (1980), 1-23

Forth, Christopher E., 'Intellectuals, Crowds and the Body Politics of the Dreyfus Affair', *Historical Reflections*, 1, 24 (1998), 63-91

Foucault, Michel, 'The Birth of Biopolitics', in *The Essential Foucault: Selections from The Essential Works of Foucault 1954-1984*, ed. by Paul Rabinow and Nikolas Rose (New York and London: The New Press, 2003), pp. 202-07

— 'The Dangerous Individual', in *Michel Foucault: Politics, Philosophy, Culture, Interviews and Other Writings 1977-1984*, ed. by Lawrence D. Kritzman (New York and London: Routledge, Chapman and Hall Inc., 1988), pp. 125-51

— 'Governmentality', in *The Foucault Effect: Studies in Governmentality*, ed. by Graham Burchell, Colin Gordon, and Peter Miller (Chicago: The University of Chicago Press, 1991), pp. 87-104

— *The History of Sexuality*, trans. by Robert Hurley, 3 vols (London: Penguin, 1998)

— *Madness and Civilization: A History of Insanity in the Age of Reason*, trans. by Richard Howard (New York: Vintage Books, 1973)

Franks, Benjamin, *Rebel Alliances: The means and ends of contemporary British anarchisms* (Glasgow: Bell and Bain Ltd., 2006)

Gabriel, Elun, 'The Anarchist as Monster in Fin-de-Siècle Europe', in *Monsters and the Monstrous: Myths and Metaphors of Enduring Evil*, ed. by Niall Scott (Amsterdam, New York: Rodopi, 2007), pp. 103-20

Garland, David, 'British Criminology Before 1935', *The British Journal of Criminology*, 2, 28 (1988), 1-17

Garver, Ernest, 'After Virtù: rhetoric, prudence and moral pluralism in Machiavelli' *History of Political Thought*, 2, 17 (1996), 195-223

Gibson, Mary, *Born To Crime: Cesare Lombroso and the Origins of Biological Criminology* (London: Praeger, 2002)

— 'Cesare Lombroso and Italian Criminology: Theory and Politics', in *Criminals and Their Scientists: The History of Criminology in International Perspective*, ed. by Peter Becker and Richard F. Wetzell (New York and Cambridge: Cambridge University Press, 2006), pp. 137-58

Gilman, Stuart C., 'Political Theory and Degeneration: From Left to Right, from Up to Down', in *Degeneration: The Dark Side of Progress*, pp. 165-98

Ginneken, Jaap van, *Crowds, psychology, and politics 1871-1899* (Cambridge: Cambridge University Press, 1992)

Girón, Álvaro, 'Kropotkin Between Lamarck and Darwin: The Impossible Synthesis', *Asclepio*, 1, 55 (2003), 189-213

— 'Metáforas finiseculares del declive biológico: Degeneración y revolución en el anarquismo español (1872-1914)', *Asclepio*, 1, 51 (1999), 247-73

Greenslade, William, *Degeneration, culture and the novel, 1880-1940*, (Cambridge: Cambridge University Press, 1994)

Hacking, Ian, 'How should we do the history of statistics?', in *The Foucault Effect*, pp. 181-95

— ‘Making Up People’, in *Reconstructing Individualism: Autonomy, Individuality, and the Self in Western Thought*, ed. by Thomas C. Heller, Morton Sosna, and David E. Wellbery (Stanford, California: Stanford University Press, 1986), pp. 222-36

— *The Taming of Chance* (Cambridge, New York, and Melbourne: Cambridge University Press, 1990)

Hall, Thomas, *Planning Europe's Capital Cities: Aspects of Nineteenth-Century Urban Development* (London and New York: Routledge, 2010)

Halliday, Stephen, *The Great Stink of London: Sir Joseph Bazalgette and the Cleansing of the Victorian Capital* (Stroud: The History Press, 2008)

Hartman, Janine C., ‘Transatlantic Spartacus’, in *The Afterlife of John Brown*, ed. by Andrew Taylor and Eldrid Herrington (New York and Basingstoke: Palgrave Macmillan, 2005), pp. 145-58

Harvey, A. D., *Body Politic: Political Metaphor and Political Violence* (Newcastle: Cambridge Scholars Publishing, 2007)

Hempel, Sandra, *The Medical Detective: John Snow and the Mystery of Cholera* (London: Granta Books, 2006)

Hoffmann, David L., ‘European Modernity and Soviet Socialism’, in *Russian Modernity: Politics, Knowledge, Practices*, ed. by David L. Hoffman and Yanni Kotsonis (London: MacMillan Press Ltd. 2000), pp. 245-60

Holquist, Peter, ‘To Count, to Extract, and to Exterminate: Population Statistics and Population Politics in Late Imperial and Soviet Russia’, in *A State of Nations: Empire and Nation-Making in the Age of Lenin and Stalin* ed. by Ronald Grigor Sunny and Terry Martin (Oxford: Oxford University Press, 2001), pp. 111-44

Honeywell, Carissa, 'Bridging the Gaps: Twentieth-Century Anglo-American Anarchist Thought', in *Continuum Companion to Anarchism*, ed. by Ruth Kinna (New York: Continuum, 2012), pp. 111-39

Hong, Nathaniel, 'Constructing the Anarchist Beast in American Periodical Literature, 1880-1903', *Critical Studies in Mass Communication*, 9, 1 (1992), 110-30

Jensen, Richard, 'Daggers, Rifles and Dynamite: Anarchist Terrorism in Nineteenth-Century Europe', *Terrorism and Political Violence*, 1, 16 (2004), 116-53

Joll, James, *The Anarchists*, 2nd edn (London: Methuen, 1979)

Jun, Nathan, *Anarchism and Political Modernity* (New York: Continuum International Publishing Group, 2012)

Kingston-Mann, Nathan, 'Statistics, Social Science, and Social Justice: The Zemstvo Statisticians of Pre-Revolutionary Russia', in *Russia in the European Context*, pp. 113-39

Kinna, Ruth, 'Fields of Vision: Kropotkin and Revolutionary Change', *SubStance*, 2, 36 (2007), 67-86

— 'George Crowder's Classical Anarchism and the Uniqueness of Kropotkin's Thought', *Anarchist Studies*, 1, 1 (1993), 51-58

— 'Introduction', in *Early Writings on Terrorism*, ed. by Kinna, 3 vols (Abingdon: Routledge, 2006), pp. xxi-xlii

— 'Kropotkin and Huxley', *Politics*, 2, 12 (1992), 41-47

— 'Kropotkin, Peter (1842-1921)', in *Encyclopedia of Power*, ed. by Keith Dowding (Los Angeles, London, New Delhi, Singapore, and Washington DC: Sage, 2011), pp. 366-67

— ‘Kropotkin’s Theory of Mutual Aid in Historical Context’, *International Review of Social History*, 2, 40 (1995), 259-83

— ‘Revolution’, in *Encyclopedia of Power*, pp. 576-77

Kinna, Ruth, and Süreyya Evren, ‘Introduction: Blasting the Canon’, in *Blasting the Canon*, ed. by Kinna and Evren (New York: Punctum, 2013), pp. 1-6

Kushner, Howard I., ‘Suicide, Gender, and the Fear of Modernity in Nineteenth-Century Medical and Social Thought’, *Journal of Social History*, 3, 26 (1993), 461-90

Ledger, Sally, and Roger Luckhurst, ‘Introduction: Reading the “Fin de Siècle”’, in *The Fin de Siècle: A Reader in Cultural History, c. 1880-1900*, ed. by Ledger and Luckhurst (Oxford: Oxford University Press, 2000), pp. xiii-xxiii

Lewis, R. A., *Edwin Chadwick and the Public Health Movement, 1832-1854* (London, New York, and Toronto: Longmans, Green and Co., 1952)

Lucas, Colin, ‘The Crowd and Politics between “Ancien Regime” and Revolution in France’, *The Journal of Modern History*, 3, 60 (1988), 421-57

Luke, Timothy W., ‘On Nature and Society: Rousseau versus the Enlightenment’, *History of Political Thought*, 2, 5 (1984), 211-43

Marks, John, ‘Michel Foucault: Biopolitics and Biology’, in *Foucault in an Age of Terror: Essays on Biopolitics and the Defence of Society*, ed. by Stephen Morton and Stephen Bygrave (Basingstoke and New York: Palgrave Macmillan, 2008), pp. 88-105

Marshall, Alex, *The Russian General Staff and Asia, 1800-1917* (London and New York: Routledge Taylor and Francis Group, 2006)

Marshall, Peter, *Demanding the Impossible: A History of Anarchism* (London: HarperCollins Publishers, 1992)

Marx, Otto M., 'Nineteenth-Century Medical Psychology: Theoretical Problems in the Work of Griesinger, Meynert, and Wernicke', *Isis*, 3, 61 (1970), 355-70

May, Todd, 'Anarchism from Foucault to Rancière', in *Contemporary Anarchist Studies: An introductory anthology of anarchy in the academy*, ed. by Randall Amster, Abraham DeLeon, Luis A. Fernandez, Anthony J. Nocella II, and Deric Shannon (London and New York: Routledge, 2009), pp. 11-17

McKinley, C. Alexander, *Illegitimate Children of the Enlightenment: Anarchists and the French Revolution, 1880-1914* (New York: Peter Lang, 2008)

McLaughlin, Paul, *Anarchism and Authority: A Philosophical Introduction to Classical Anarchism* (Hampshire, Burlington: Ashgate, 2007)

Miller, David, *Anarchism* (London and Melbourne: J.M. Dent and Sons, 1984)

— 'The Neglected Kropotkin', *Government and Opposition*, 3, 18 (1983), 319-38

Miller, Martin A., 'Introduction', in *Selected Writings*, pp. 1-44

— *Kropotkin* (Chicago and London: University of Chicago Press, 1976)

Moran, Francis, 'Between Primates and Primitives: Natural Man as the Missing Link in Rousseau's Second Discourse', *Journal of the History of Ideas*, 1, 54 (1993), 37-58

Morland, David, *Demanding the Impossible? Human Nature and Politics in Nineteenth-Century Social Anarchism* (London: Cassell, 1997)

Morris, Brian, *The Anarchist Geographer: An Introduction to the Life of Peter Kropotkin* (Somerset: Genge Press, 2007)

— *Kropotkin: The Politics of Community* (New York: Humanity Books, 2004)

— 'Kropotkin's Metaphysics of Nature', *Anarchist Studies*, 2, 9 (2001), 165-80

Morrissey, Susan K., 'Mapping Civilization: The Cultural Geography of Suicide Statistics in Russia', *Journal of Social History*, 3, 46 (2013), 651-67

— *Suicide and the Body Politic in Imperial Russia* (Cambridge: Cambridge University Press, 2006)

Musolff, Andreas, 'Political metaphor and *bodies politic*', in *Perspectives in Politics and Discourse*, ed. by Urszula Okulska and Piotr Cap (Amsterdam and Philadelphia: John Benjamins Publishing Company, 2010), pp. 23-41

Nederman, C. J., 'Amazing Grace: Fortune, God, and free will in Machiavelli's thought', *Journal of the History of Ideas*, 4, 60 (1999), 617-38

Newman, Saul, *From Bakunin to Lacan: Anti-Authoritarianism and the Dislocation of Power* (Oxford and Maryland: Lexington Books, 2001)

Novak, D., 'Anarchism and Individual Terrorism', *The Canadian Journal of Economics and Political Science*, 2, 20 (1954), 176-84

— 'The Place of Anarchism in the History of Political Thought', *The Review of Politics*, 3, 20 (1958), 307-29

Nye, Robert A., *Crime, Madness, and Politics in Modern France: The Medical Concept of National Decline* (Princeton, New Jersey: Princeton University Press, 1984)

— *The Origins of Crowd Psychology: Gustave Le Bon and the Crisis of Mass Democracy in the Third Republic* (London and California: Sage Publications, 1975)

Olson, Richard G., *Science and Scientism in Nineteenth-Century Europe* (Urbana and Chicago: University of Illinois Press, 2008)

Oosterhuis, Harry, 'Sexual Modernity in the Works of Richard von Krafft-Ebing and Albert Moll', *Medical History*, 2, 56 (2012), 133-55

Padovan, Dario, 'Social Morals and Ethics of Nature: from Peter Kropotkin to Murray Bookchin', *Democracy and Nature*, 3, 5 (1999), 485-500

Patriarca, Silvana, *Numbers and Nationhood: Writing Statistics in Nineteenth-Century Italy* (Cambridge, New York, and Melbourne: Cambridge University Press, 1996)

Pick, Daniel, *Faces of Degeneration: A European Disorder, c. 1848 – c. 1918* (Cambridge: Cambridge University Press, 1989)

Pomper, Philip, *Peter Lavrov and the Russian Revolutionary Movement* (Chicago and London: The University of Chicago Press, 1972)

Porter, Thomas M., *The Rise of Statistical Thinking, 1820-1900* (Princeton: Princeton University Press, 1986)

Rafter, Nicole Hahn, *Creating Born Criminals* (Urbana and Chicago: University of Illinois Press, 1997)

Ramsey, Matthew, 'Public Health in France', in *The History of Public Health and the Modern State*, ed. by Dorothy Porter (Amsterdam and Atlanta: Editions Rodopi B. V, 1994), pp. 45-118

Rasmussen, Claire, and Michael Brown, 'The Body Politic as Spatial Metaphor', *Citizenship Studies*, 2, 9 (2005), 469-84

Rich, David, 'Imperialism, Reform and Strategy: Russian Military Statistics, 1840-1880', *The Slavonic and East European Review*, 4, 74 (1996), 621-39

Rimke, Heidi, and Alan Hunt, 'From Sinners to Degenerates; the medicalization of morality in the nineteenth century', *History of the Human Sciences*, 1, 15 (2002), 59-88

Rogers, James Allen, 'The Reception of Darwin's Origin of Species by Russian Scientists', *Isis*, 4, 64 (1973), 484-503

- ‘The Russian Populists’ Response to Darwin’, *Slavic Review*, 3, 22 (1963), 456-68
- Scanlan, James P., ‘Populism as a Philosophical Movement in Nineteenth-Century Russia’, *Studies in Soviet Thought*, 3, 27 (1984), 209-23
- Schrader, Abby M., ‘Branding the Exile as “Other”’: Corporal Punishment and the Construction of Boundaries in Mid-Nineteenth-Century Russia’, in *Russian Modernity*, pp. 19-40
- Schwartz, Joel S., ‘George John Romanes’s Defense of Darwinism: The Correspondence of Charles Darwin and His Chief Disciple’, *Journal of the History of Biology*, 2, 28 (1995), 281-316
- ‘Out from Darwin’s Shadow: George John Romanes’s Efforts to Popularize Science in “Nineteenth Century” and Other Victorian Periodicals’, *Victorian Periodicals Review*, 2, 35 (2002)
- Scott, James C., *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven and London: Yale University Press, 1998)
- *Two Cheers for Anarchism: Six Essay Pieces on Autonomy, Dignity, and Meaningful Work and Play* (Princeton and Oxford: Princeton University Press, 2012)
- Scott, Peter, ‘Henry Maudsley’ in *Pioneers in Criminology*, ed. by Hermann Mannheim (London: Stevens and Sons, 1960), pp. 144-67
- Seegel, Steven, *Mapping Europe’s Borderlands: Russian Cartography in the Age of Empire* (Chicago and London: University of Chicago Press, 2012)
- Sellin, Thorsten, ‘Enrico Ferri’ in *Pioneers in Criminology*, pp. 277-99
- Shpayer-Makov, Haia, ‘Anarchism in British Public Opinion 1880-1914’, *Victorian Studies*, 4, 31 (1988), 487-516

Sonn, Richard D., 'Preface', in Sonn, *Anarchism* (New York: Twayne Publishers, 1992), pp. xi-xv

Stigler, Stephan M., *The History of Statistics: The Measurement of Uncertainty before 1900* (Cambridge, Massachusetts, and London: The Belknap Press of Harvard University Press, 1986)

Sunderland, Willard, 'Imperial Space: Territorial Thought and Practice in the Eighteenth Century', in *Russian Empire: Space, People, Power, 1700-1930*, ed. by Jane Burbank, Mark von Hagen, and Anatolyi Remnev (Bloomington and Indianapolis: Indiana University Press, 2007), pp. 33-66

Tarlton, C., "'To avoyd the present stroke of death": Despotical dominion, force, and legitimacy in Hobbes's 'Leviathan'', *Philosophy*, 288, 74 (1999), 221-45

Todes, Daniel P., *Darwin without Malthus: The Struggle for Existence in Russian Evolutionary Thought* (New York and Oxford: Oxford University Press, 1989)

— 'Darwin's Malthusian Metaphor and Russian Evolutionary Thought, 1859-1917', *Isis*, 4, 78 (1987), 537-51

Verplaetse, Jan, 'Prosper Despine's Psychologie naturelle and the discovery of the remorseless criminal in nineteenth-century France', *History of Psychiatry*, 13 (2002), 153-75

Vucinich, Alexander, *Darwin in Russian Thought* (London and California: University of California Press, 1988)

Walicki, Andrzej, *A History of Russian Thought: From the Enlightenment to Marxism*, trans. by Hilda Andrews-Rusiecka (Stanford, California: Stanford University Press, 1979)

Wanke, Paul, *Russian/Soviet Military Psychiatry, 1904-1945* (London and New York: Frank Cass, 2005)

Wessely Simon, *Shell Shock to PTSD: Military Psychiatry from 1900 to the Gulf War* (Hove and New York: Psychology Press, 2005)

Wetzell, Richard F., *Inventing the Criminal: A History of German Criminology, 1880-1945* (Chapel Hill and London: The University of North Carolina Press, 2000)

Whelehen, Niall, 'Political violence and morality in anarchist theory and practice: Luigi Galleani and Peter Kropotkin in comparative perspective', *Anarchist Studies*, 2, 13 (2005), 147-68

Woodcock, George, *Anarchism: A History of Libertarian Ideas and Movements* (Harmondsworth: Penguin, 1962)

Woodcock and Avakumovic, *The Anarchist Prince*

Wright, Joanne H., *Origin Stories in Political Thought: Discourses on Gender, Power, and Citizenship* (Toronto, Buffalo, and London: University of Toronto Press, 2004)