Introduction: poison traces

Poisoning is a universal phenomenon. Every society and every age has known it. Poisoning is present in the malignant guile and cunning deceit of the homicidal murderer, in the despairing fate of the man or woman driven to suicide, in the acute suffering and agonizing death caused by accidental contact with toxic substances. Poisoning is made manifest in the contamination and adulteration of food and drink, in the misuse of medicines and in the unintended effect of their toxic ingredients. In modern times, poisoning has resulted from toxic substances released into the environment through garbage tips, factory waste and industrial accidents, through stifling traffic fumes and the urban smog lowering over our cities. The stuff of fantasy, sensational murder trials, detective stories and 'true crime' tales, poisoning has caused the most public of tragedies, in which scores, even thousands, of people have perished: but it can also lurk, unseen and unsuspected, in our homes, workplaces and everyday lives. Poisons possess an incontestable materiality – in their chemical composition and physiological effects – but poison and poisoning are also extraordinarily rich in their semantic use and cultural deployment, as metaphors of malice and emblems of evil.

Modern society and modern science have conspired to create of poisons a kind of toxic globality. Toxic waste gets exported around the globe: it is dumped in deserts and landfill sites, in rivers and seas. Residual traces of toxic pesticides can be found in people, animals, plants and insects almost anywhere from the hot tropics to the frozen poles. Minerals, implicated for centuries in homicidal or accidental poisoning, are used in, or result from, industrial processing around the globe, their toxic detritus spilling over into cities and oceans. As commercial commodities, poisons are traded around the world and accidentally or inadvertently enter into an increasingly complex and interconnected domain of human ill health and ecological decay.[1] Forensic techniques and forms of

[1] Brett L. Walker, *Toxic Archipelago: A History of Industrial Disease in Japan* (Seattle: University of Washington Press, 2010).

toxicological knowledge that were once the preserve of the West are now the property of almost every country. Poisons, no less than the medicines they so often mimic, have proved highly mobile. We are familiar enough with culinary diasporas in which foods like sugar or maize have migrated from place to place, often, but not invariably, alongside the peoples among whom they originated. We could equally think of poison diasporas, in which toxic plants and minerals, poison practices and poison lore have migrated or been knowingly transferred from one region of the world to another, taking on a virtual universality of their own.[2]

And yet, for all this global trafficking and exchange, the claim can still be made that different societies have experienced and understood poison and poisoning differently from one another. The poisons used in suicide and murder have tended to be those most readily to hand – in the home and at the workplace – though the familiar and domestic nature of those substances might indicate the symbolic significance of their use, not merely their convenient availability.[3] Differently endowed by nature, history and culture, different societies have had different stores of poison (and different stories about poison) at their disposal. Mineral, vegetable and animal poisons found in one part of the world might, even now, be unknown or unobtainable in another.[4] Toxic diffusion has never entirely eliminated local poison cultures and local poison practices. Arjun Appadurai has observed that in a globalizing world the local can often reassert itself in surprising forms: poison might be one of the less pleasant of those surprises.[5] Apart from wide geographical variations in the distribution of poisons, the moral significance ascribed to poisoning, the degree of social acceptance or repugnance at its use, its historical associations and cultural resonances – each of these might still vary significantly from one society to another. What one set of people call a poison might

[2] For an example of the export of India's poison culture via a convict sent to Mauritius, see Angus Calder, *Gods, Mongrels and Demons* (London: Bloomsbury, 2003), 7–10. Conversely, another Indian poisoner was said to have learned his art from fellow convicts in Mauritius: A. H. Giles, 'Poisoners and Their Craft', *CR* 81 (1885): 110.

[3] On Britain, see Olive Anderson, *Suicide in Victorian and Edwardian England* (Oxford: Clarendon Press, 1987), ch. 10. One of the means by which unhappy wives in India sought to end their own lives, or those of their husbands, was by means of powdered glass, taken from their wrist bangles and crushed on a kitchen grindstone. Since for Hindu women bangles signified the married state, their breaking was symbolic of widowhood and separation. For one such case and its detection, see *RCA (Bombay), 1891*, 7.

[4] In 2009, a poisoning occurred in London involving a woman of South Asian origin and use of the drug aconite. In the subsequent trial, this poison was said to be extremely rare in Britain and therefore suggested a connection with India, where it was much more common: 'Curry Poisoning Woman Found Guilty of Murder', http://news.bbc.co.uk/1/hi/england/london/8492936.stm.

[5] Arjun Appadurai, *The Future as Cultural Fact: Essays on the Global Condition* (London: Verso, 2013), 4.

appear innocuous, even beneficial, to another. It is a cliché worth repeating that one man's meat is another man's poison. Poisoning is a universal phenomenon, but nowhere is its history the same.

Toxic Histories seeks to address in equal measure the social cognition and the scientific understanding of poisons and poisoning in nineteenth- and twentieth-century India. It aims to demonstrate, first of all, the existence within that spatial and temporal context of a significant and distinctive poison culture, one that was of sufficient importance and extent to generate an extensive literature and critical commentary all its own. The book sets out to show how poison and poisoning were socially and culturally embedded in pre-colonial India, and how India's experience of colonialism (until 1858 under the English East India Company and thereafter under the British Crown until partition and independence in 1947) helped transform the social parameters and political understanding of local poison practice. An existing poison culture became politicized and polemicized under British rule, but Indian agency also had a part in that process of transformation. *Toxic Histories* seeks to demonstrate the place of science, and the social authority of science, in colonial modes of poison governance, to show how toxicology – the scientific study of poisons and poisoning – became a salient and indicative part of the way in which science spoke to both an imperial and an Indian public.

On the face of it, the case for India having a prominent and distinctive culture of poison and poisoning might appear unpromising. If one turns to the statistical record, the medium through which so much of the colonial understanding of India was presented, poisoning might seem to be of only marginal significance. In the great tally of human sickness and mortality in British India, poisoning was dwarfed by such monumental killers as smallpox, cholera, malaria and plague. In 1873, in the vast and populous North-Western Provinces, out of 765,534 patients treated in dispensaries and allied medical institutions, only 1,377 cases (0.2 per cent) involved poisoning, and of these only 56 proved fatal.[6] In 1903, in the same province, now renamed the United Provinces, out of more than 3 million individuals attending hospitals and dispensaries, barely 5,000 were poison cases.[7] In 1911, there were some 7,000 poison cases and a mere 38 fatalities.[8] At a time when tens of thousands of people across this and other Indian provinces were dying of famine and epidemic disease, remarkably few cases of poisoning – homicidal, suicidal or accidental – were recorded. Even allowing for substantial under-reporting (especially

[6] *Annual Report of the Dispensaries of the North-Western Provinces, 1865*, 7, 10.
[7] *Annual Report of the Hospitals and Charitable Institutions of the United Provinces, 1903*, 69A.
[8] *Annual Report of the Civil Hospitals and Dispensaries of the United Provinces, 1911*, 43A, 51A.

of non-fatal cases), statistically speaking, poisoning appears as little more than a minor footnote to a far more compelling history of mass mortality.[9]

Similarly, if one looks at the provincial police reports of the time, poison cases do not figure particularly prominently compared to other categories of murder and assault or the high level of property crimes and public order offences. In 1911, the police in the United Provinces took up sixty-six poison cases (twenty-one of them attributed to 'professional poisoners') and secured only seventeen convictions. Significantly, though, a further eighty-two cases involved cattle poisoning – in India, people were not poison's only victims.[10] If one turns to the annals of Indian criminality in general, the activities of the thugs, who deceived, strangled and dismembered travellers on the highways of nineteenth-century India, attracted wide publicity and impelled the colonial state to adopt drastic measures for their suppression. Dacoit gangs and 'criminal tribes' provoked further exceptional, often draconian, measures. By contrast, poisoning and poisoners do not appear to have caused comparable levels of public distress and state concern.[11] But, if that were so, and if poisoning were of little material significance, what are we to make of the observation made by Bengal's chemical examiner in 1902 that 'no country in the world furnishes anything like the amount of toxicological material that India does'?[12] Was this seemingly scientific utterance mere prejudice and fantasy? If the historiography of Indian criminality has largely ignored poisoning, does that lacuna connote an actual absence or a flaw in the writing of that history?

Nor does the extensive historiography of health, medicine and disease in British India offer a more promising platform for an enquiry. Academic scholarship has in the main been committed to the idea that the history of medicine is concerned with disease on the one hand and healing on the other. It has not overly concerned itself with the indeterminate middle ground, with the 'constitutive ambivalence' of the *pharmakon*, in which substances that function as medicines serve also as poisons or operate as both poisons and medicines simultaneously.[13] Monographs and general surveys of colonial medicine have appeared in which the complexities of

[9] Ira Klein, 'Death in India, 1871–1921', *Journal of Asian Studies* 22 (1973): 639–59; David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (Berkeley: University of California Press, 1993).

[10] *Report on the Administration of the Police of the United Provinces, 1911*, 11.

[11] Poisoning receives only passing mention in Radhika Singha, *A Despotism of Law: Crime and Justice in Early Colonial India* (Delhi: Oxford University Press, 1998), and still less in Mark Brown, *Penal Power and Colonial Rule* (Abingdon: Routledge, 2014).

[12] C. H. Bedford, 'Notes on Some Toxicological Experiences in Bengal and in the Punjab', *IMG* 37 (1902): 202.

[13] On the 'constitutive ambivalence' of poisons, see Frédéric Obringer, *L'Aconit et L'Orpiment: Drogues et Poisons en Chine Ancienne et Médiévale* (Paris: Librairie Arthème Fayard, 1997), 12–14.

health provision under British rule have been meticulously examined and extensively critiqued or in which the changing configuration of India's 'indigenous systems of medicine' has been exposed to close and careful scrutiny. And yet, in all this extensive and painstaking literature, poisons and poisoning seldom rate even a mention. But does it make sense to discuss medicine without giving due consideration, too, to poison, medicine's evil twin and toxic other? Might not the diverse systems of medicine in nineteenth- and twentieth-century India be described with equal validity as systems of toxicological – as well as therapeutic – knowledge? The social use and political profile of narcotic drugs like opium and cannabis have been examined at length in recent scholarship, but their role as deliberate or accidental poisons has drawn little comment.[14] Administrative action and legislative control over various forms of intoxication – from alcohol to opium – has been noted.[15] But, by contrast, the landmark legislation of the Indian Poisons Act of 1904 has been ignored, though a sceptic might still want to argue that the fact of this enactment coming decades after similar laws in Britain might itself be taken as evidence of the secondary importance of 'poison scares' in India.[16] There never was a high-profile enquiry in India into toxicity in food and drink to match the Royal Commission on Arsenical Poisoning in Britain in 1901.[17] Should one therefore conclude that the free availability and criminal use of arsenic – the quintessence of nineteenth-century homicidal and accidental poison – was never a substantive issue in India, never of such importance as to warrant public alarm and impel state action?

Where poison appears at all in India's medical history, it is as an aside, as a flawed miasmatic concept, in which ill health was understood, before the bacteriological revelations of the late nineteenth century, as occasioned by poison-like emanations from swamps, jungles, graveyards and overcrowded habitations. Thus conceived, poison represents little more than a misconceived aetiology, an epiphenomenon attributable to the

[14] James H. Mills, 'Drugs, Consumption, and Supply in Asia: The Case of Cocaine in Colonial India, c. 1900–c. 1930', *Journal of Asian Studies* 66 (2007): 345–62; Richard Newman, 'Early British Encounters with the Indian Opium Eater', in James H. Mills and Patricia Barton (eds), *Drugs and Empires: Essays in Modern Imperialism and Intoxication, c. 1500–c. 1930* (Basingstoke: Palgrave Macmillan, 2007), 57–72.

[15] Harald Fischer-Tiné and Jana Tschurenev (eds), *A History of Alcohol and Drugs in Modern South Asia: Intoxicating Affairs* (London: Routledge, 2014).

[16] In Britain, the sale of poisons was controlled by an Act to Regulate the Sale of Arsenic in 1851, followed by two Pharmacy Acts in 1852 and 1868: James C. Whorton, *The Arsenic Century: How Victorian Britain Was Poisoned at Home, Work, and Play* (Oxford: Oxford University Press, 2010), ch. 5.

[17] *Royal Commission on Arsenical Poisoning: First Report of the Royal Commission Appointed to Inquire into Arsenical Poisoning from the Consumption of Beer and Other Articles of Food or Drink: Part I: Report* (London: His Majesty's Stationery Office, 1901).

medical uncertainties of a barely scientific age, a metaphorical substitute for the still-elusive materiality of microbes and 'germs'.[18] In ways suggestive of poison's local configuration, one of the few routes by which poisoning has entered current writing on the history of medicine and science in British India has been through non-human agency and impact – through snakes and their venom and the criminal poisoning of cattle. Both suggest the need for a more complex understanding of poisoning in animal and environmental, as well as human, histories.[19]

It is, then, the task of this book to make the case that poisons and poisoning *were* of practical importance and ideological significance to science, governance and society in British India. *Toxic Histories* seeks to show that a multi-layered but also evolving understanding of poisons and poisoning existed in India between the early 1830s and the late 1940s. It found expression not just in toxicology – a scientific domain in its own right – but also in related fields such as medicine and public health, botany, chemistry, ethnology and criminology.

Readers might reasonably question whether proposing such a strong cultural and ultimately political connection between poisons and India might not smack of Orientalism. It might seem to suggest that there was something dangerous, odd and atavistic about poisons and their usages in India that might not apply to poisons and poisoning in, say, ancient Rome, Renaissance Italy or Victorian Britain – to name just three times and places where poisoning had a significant social presence or in whose histories it has a powerful imaginative hold.[20] There is, indeed, much to connect India with the recurrent literary and artistic trope of the treacherous, guileful and malicious 'Oriental poisoner', or of the Orientalized European who deploys an Eastern knowledge of poisoning against his or her enemies.[21] Poison might speak with authority and passion to a Western sense of Eastern enchantment and danger – a connection evident even in that ur-Orientalist text, *The Arabian Nights*, with its tales of drug potions and books with poisoned pages. An association with the Orient and with India haunts not just Thomas De Quincey's opium-fuelled

[18] On miasmatic 'poisoning', see Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India, 1600–1850* (New Delhi: Oxford University Press, 1999), 26–57.

[19] Pratik Chakrabarti, *Bacteriology in British India: Laboratory Medicine and the Tropics* (Rochester, NY: Rochester University Press, 2012), ch. 4; Saurabh Mishra, *Beastly Encounters of the Raj: Livelihoods, Livestock and Veterinary Health in North India, 1790–1920* (Manchester: Manchester University Press, 2015), ch. 6.

[20] See Ian Burney, *Poison, Detection, and the Victorian Imagination* (Manchester: Manchester University Press, 2006), ch. 1. On Orientalism and its imaginative powers, see Edward W. Said, *Orientalism* (London: Routledge & Kegan Paul, 1978).

[21] The phrase 'The Eastern Poisoner' appears as a chapter heading in H. L. Adam, *The Indian Criminal* (London: John Milne, 1909).

fantasies, but also his thoughts on the 'fine art' of murder.[22] In the 1840s, the French novelist Alexandre Dumas devoted a chapter of *The Count of Monte Cristo* to the subject of toxicology, in which Madame de Villefort is instructed in the use of poisons. Throughout the book, just as opulence is identified with the legendary gold and diamond mines of Gujarat and Golconda, so is the art of poisoning intricately bound up with the Orient in general and India in particular.[23] In Léo Delibes' romantic opera *Lakmé*, first performed in 1883, the heroine, daughter of a Brahmin priest, dies after chewing a leaf from a datura (thorn apple) bush.[24] As late as 1924, one of the inmates at the sanatorium in Thomas Mann's novel *The Magic Mountain* is an eccentric Dutchman, who acquired his knowledge of strychnine during a visit to India's Coromandel Coast and uses it to end his own life.[25] Few traits so characterize the India of the imperial era as this apparently Oriental appetite for poison.[26] But to posit a connection, as this book does, between India and poisons is not thereby to endorse a fantastical or derogatory stereotype, or even simply to investigate the 'truth' behind such a deceptive facade. Rather, it is necessary, in Homi Bhabha's words, to 'recognize the stereotype as an ambivalent mode of power and knowledge', to interrogate its usages and effects and to examine how the imagining of, and fantasizing about, poison and poisoning became interwoven with a broader narrative of science and society.[27]

Meanings and concepts

It may be helpful at the outset to say a word about what the terms 'poison', 'pollution' and 'toxicity' mean and the uses to which they are put in this book. It is no more possible for colonial India than for Britain or anywhere else in the nineteenth century to offer a definitive answer to the seemingly simple question: 'What is a poison?' One plausible answer might lie in the authoritative texts that helped establish the modern science of poisons in Europe and so informed investigation into poisons in British India. In his foundational treatise on toxicology, published in French in 1815 and in English a year later, the chemist Mathieu Orfila stated: 'The name of poison is given to any substance, which, taken inwardly in a very small

[22] Thomas De Quincey, *Confessions of an English Opium Eater* (London: Penguin, 1971); idem, *On Murder* (Oxford: Oxford University Press, 2006).
[23] Alexandre Dumas, *The Count of Monte Cristo* (London: Penguin, 2003), ch. 52.
[24] Earl of Harewood (ed.), *Kobbé's Complete Opera Book* (London: Putnam, 1981), 821–26.
[25] Thomas Mann, *The Magic Mountain* (London: Vintage Books, 1999), 548, 578–79.
[26] For a contrary attempt to downplay the perceived exceptionality of poisoning in India, see Giles, 'Poisoners', 78–122.
[27] Homi K. Bhabha, *The Location of Culture* (London: Routledge, 1994), 66.

dose, or simply applied in any kind of manner to a living body, depraves the health, or entirely destroys life.' He went on to identify different categories of poisons – from 'stupefying and narcotic poisons' like opium and datura, through mineral and metallic poisons like arsenic, mercury and copper, to 'septic, or putrefying poisons', such as arose from 'contagious miasmata, emanating from pestiferous bodies, or bales of merchandize coming from a place infected with the plague'.[28] Even nineteenth-century commentators found Orfila's poison typology vague and excessively wide ranging. A leading British toxicologist and authority on medical jurisprudence, Alfred Swaine Taylor, proposed a more concise definition. Poison was any substance which, 'when administered in small quantity, is capable of acting deleteriously on the body'. This, though, he conceded, might define poison too narrowly. Even substances like common salt could become poisonous if consumed in large quantities, and not all poisons (such as snake venom) could be said to be 'taken internally'. In common usage, Taylor noted, to speak of a poison generally signified a 'deadly poison', an intensely toxic substance like arsenic or strychnine that could rapidly destroy human life and not just inflict temporary discomfort. This, he suggested, was also much closer to what toxicologists themselves had in mind.[29]

Modern dictionary definitions follow broadly the same lines as those proposed by Taylor more than a century and a half ago, but with some significant additions. Typically poison is identified as 'any substance which, taken into *or formed in the body*, destroys life or impairs health' – thus recognizing the capacity of the body itself to produce poisons or toxins.[30] A recent medical encyclopaedia notes that many common substances can prove poisonous to the human body when taken in excess but prefers to reserve the term 'poison' for materials that are 'harmful in small quantities'. Even so, the list of poisons is still a very long one, and includes 'practically all [medicinal] drugs and many minerals and synthetic substances'.[31] We also now know more than Orfila and Taylor did about how poisons actually work. Corrosive poisons, such as acids, alkalis and many disinfectants, act by altering the chemical state of proteins in the body and so cause 'indiscriminate damage' to living matter. Other poisons interfere with the body's chemical reactions – cyanides, for

[28] M. P. Orfila, *A General System of Toxicology, or Treatise on Poisons* (London: E. Cox & Son, 1816), 1–12.
[29] Alfred S. Taylor, *On Poisons, in Relation to Medical Jurisprudence and Medicine* (London: John Churchill, 1848). On the definitional problem faced by Taylor and his contemporaries, see Burney, *Poison*, 57–60.
[30] *Chambers English Dictionary* (Cambridge: Chambers, 1988), 1127 (emphasis added).
[31] Peter Wingate with Richard Wingate, *The Penguin Medical Encyclopedia* (3rd ed., London: Penguin, 1988), 380.

instance, prevent the transfer of oxygen in living cells and induce 'chemical suffocation'. Vegetable poisons (which can be more toxic in small doses than mineral poisons) are often chemically related to substances in the body, which they displace in vital reactions. 'Their use as [therapeutic] drugs depends on these effects', and so poisoning is 'an exaggeration of the medicinal effect'.[32]

The law did not always view poisoning in the same light as medical science. The Indian Penal Code, dating from 1860, and the Criminal Procedure Code that followed it gave no specific definition of poison. There was, however, general recognition of another of Taylor's medico-legal axioms – that a poison was 'a substance which, when absorbed into the blood, is capable of seriously affecting health or of destroying life'.[33] For the purposes of India's criminal courts, there was no need to define what constituted a poison because 'any act done with the intention of causing injury, no matter by what means caused', constituted a punishable offence. If that act resulted in the victim's death, then the offence became murder or culpable homicide. If it merely caused injury, it amounted to 'simple hurt' or 'grievous hurt', according to the degree of harm sustained. In other words, intention counted for more than method, or, in the case of poison, the nature of substance and the size of the dose administered.[34] Such a legalistic approach was of little help, however, in defining what constituted poison or in differentiating between various poisons and their toxic effects.[35] Even the Indian Poisons Act of 1904 did not define poison but instead drew up a schedule of poisons that fell under the scope of the act. In practice, poison in British India came to be understood through a series of interrelated cognitive processes, executive strategies and scientific techniques. These included diverse modes of scientific investigation, notably a botanical-medical route through which poisons were identified via their plant origins, social uses and physiological effects, and a biochemical-bacteriological route that involved laboratory testing to establish the presence of a specific chemical or bacterial agent. These, in turn, helped fuel a system of medical jurisprudence to which ethnology and criminology were also added. Just as botany and chemistry sought to make visible otherwise secretive modes of poisoning, so medical techniques (such as the use of post-mortems)

[32] Ibid.
[33] Cited in Patrick Hehir, *Opium: Its Physical, Moral, and Social Effects* (London: Ballière, Tindall & Cox, 1894), 358.
[34] Ibid, 358–59; L. A. Waddell, *Lyon's Medical Jurisprudence for India* (5th ed., Calcutta: Thacker, Spink, 1914), 415.
[35] There remained many anomalies: for instance, powdered glass, when used in suicide and murder, was classed as a poison, though its action was not chemical but that of a 'mechanical irritant': Waddell, *Lyon's*, 514.

provided other means by which to make poisons and poisoning legible, detectable and so amenable to science and the exercise of state power. These often highly technical modes of enquiry exemplified the view that an understanding of poison, even when scientifically grounded and tested, in actuality reflected the concept of poison less as an objective reality and discreet materiality than as a politically contingent and socially constructed idea.[36] To a significant degree, a poison was a poison not just because of its plant origins or chemical properties but because it had long been used as such or because it had, over time, become a signifier for specific cultural traits and social characteristics.

There is heuristic value, moreover, in recruiting the idea of poisons and poisoning to inform and substantiate a still wider notion of toxicity. It is part of the ambition of this work to present toxicity as an overarching concept, and not merely as a set of disparate ideas and practices, to see how such a concept emerged, attained authority and evolved alongside other key concepts of the period – such as poverty and development – to help construct and appraise India's modernity.[37] Although dictionary definitions make little distinction between what is toxic and what is poisonous, the value for the present work of using both terms conjointly is that they make it possible to trace the evolution of ideas of poisons from being substances external to the body to having a living presence within the body: as 'poisons' in the increasingly redundant miasmatic sense passed out of use, they became reconstituted in a bacteriological age as 'toxins', as poisonous elements generated or active within the body. Physicians began to talk, too, about the 'toxic' side effects of chemotherapy, of the adverse but unavoidable consequences of using ancient poisons like arsenic and antimony to modern medicinal effect. Between the late nineteenth century and the early decades of the twentieth, medicine constructed a new language, a new conceptualization, of what toxicity might mean – for the body, for medicine, for society.

In recent years, 'toxicity' has taken on a new semantic significance as a means of conceptualizing and critiquing a poisoning not just of people but of the environment at large, as modern industry and urban living have polluted (i.e., brought toxicity to) food, water and atmosphere, and had a wide-ranging and detrimental impact on soils, plants and animals. As William Cronon has put it, in describing 'the pain of a poisoned world', since the mid-twentieth century we have become aware of 'the proliferating presence of toxic compounds in the webs of ecological relationships

[36] On contructivism, see Jan Golinski, *Making Natural Knowledge: Constructivism and the History of Science* (Cambridge: Cambridge University Press, 1998).
[37] Reinhart Koselleck, *The Practice of Conceptual History: Timing History, Spacing Concepts* (Stanford: Stanford University Press, 2002).