Introduction: the global biometric arena

Over the last century South Africa has acted as a global stage for the schemes and controversies of biometric government. This history has been tumultuous, but it has also, after four generations, produced a blueprint for a new architecture of state power that is spreading through the former colonies of the European empires – in these territories a clearly distinguishable biometric state is taking form, which, for the moment at least, seems to mark the technological apogee of the information society. Around the world biometric registration systems are changing the way a particular group of states undertake vital registration, build voters' rolls, distribute welfare benefits, control credit transactions, issue identity documents and police immigration. These new states, and their citizens, are adopting technologies and structures of administration that were often first developed and most fully elaborated in South Africa. They are also taking sides – often unwittingly – in an international political argument about the virtues and faults of biometric identification that has been animated, in every generation, by the twentieth-century history of South Africa.

This, then, is the history of a new kind of state, a biometric state. The explanation I offer is necessarily double-sided, Janus-faced, with lines of causality that run in opposing directions. On the one side, like other transnational histories, the book examines the ways in which the world made South Africa, in particular how the global fingerprinting project created a distinctive state in this country.[1] On the other, it examines how the events and ideologies produced by the very local (and often obscure, antipodean) struggles of this history around biometric identification fashioned a global politics.

In this introduction my goal is to orient my readers to the project of the book, and to clear – or at least identify – the most serious obstacles to my broader argument. The chapter falls into two obvious halves: the first

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[1] E. Rauchway, *Blessed Among Nations: How the World Made America* (New York: Hill and Wang, 2007).

deals with problems of nomenclature and the second with the overall argument of the book. To begin with I ask, what is the state? And what, perhaps more obviously, are biometrics? The answers, inevitably, are not straightforward in either case but I try to venture working explanations for each of them. I then turn to the significance of what happens when the two terms are combined in the biometric state. This is a new kind of state, with a distinctive form of organisation, one which requires us to depart in important ways from the most influential ways of thinking about bureaucratic power. As an example of the biometric state I offer a very brief discussion of the current Aadhaar project in India, which has technological, philosophical and political links to the South African history. The chapter then turns to an overview of the story presented in the book.

The problem of the state

As this is the story of the emergence of a new state, a working understanding of what I mean by that word seems a good place to begin. This is not, unfortunately, as straightforward as it might seem. The first problem has its origins in an old enthusiasm in European philosophy for granting personality to the state. In these accounts the state is *reified*, treated as a god-like person, freed from the rules of morality that apply to human individuals. We can track the power that follows from attributing autonomous moral interests to the state in the ongoing hold of Machiavelli's 500-year-old argument. The consequences of his recommendation of a new kind of mercilessly enforced political virtue, one that seeks only to defend the interests of the state – regardless of conventional morality – can be seen in our own time and in every generation before it; in this *raison d'état* the state becomes a person with an unchecked prerogative for self-defence.[2] This idea of an autonomous – god-like – personality was bolstered by Hobbes' *Leviathan*[3] and, especially, by Hegel's account of the state as the expression of a universal idea, carrying

[2] Niccolò Machiavelli, *The Prince*, vol. 36 (London: Oxford University Press, 1903), 41–3, 69–71; Quentin Skinner, *Machiavelli: A Very Short Introduction* (Oxford University Press, 2000), 34–81. On the hegemony, in Italy, of the *raison d'état* over older forms of personal political virtue, see Maurizio Viroli, *From Politics to Reason of State: The Acquisition and Transformation of the Language of Politics 1250–1600* (Cambridge University Press, 2005), 237–80. Machiavelli insisted, in *Discourses on the First Decade of Titus Livius*, that the 'citizens are to be watched so that they cannot under the cover of good do evil and so that they gain only such popularity as advances and does not harm liberty' – by which he meant the liberty of the state, see Skinner, *Machiavelli*, 75.

[3] Thomas Hobbes, *Leviathan* (Harmondsworth: Penguin, 1985).

European enlightenment out of the mists of history.[4] The unwarranted and often problematic assumptions of these older accounts of the state as a singular, mindful and sovereign agent have not been much curtailed by the dominant twentieth-century theories (from Weber and Foucault) that present the state as a dispersed agent of rationalisation, discipline or governmentality.[5] In each case the problems of what the state actually is, how it can be separated from society and how it acts have been neglected in favour of even larger questions about the operations of power on a cultural scale.

Some scholars have produced richly informative studies of the state by adopting simple definitions, or by neglecting them altogether. Using Weber's explanation that states were simply 'coercion wielding organisations' exercising unambiguous dominion over defined territories, Tilly was able to produce a summary explanation of the modern nation-state in Europe emerging from the combined demands of war-making and capital-raising.[6] While his study included the city-states of Italy and Germany, it was mostly unworried about the boundaries or relationships between the most powerful firms and the formal bureaucracies. In a similar way, Anderson was able to trace how the combined effects and demands of centralisation, empire-building, global trade, large-scale European war, bureaucratic innovation and reinvented forms of legal codification fashioned a club of absolutist monarchies in Europe between the fifteenth and twentieth centuries.[7] His history produced a distinctive description of the absolutist state – powerful, centralised, imperial, tax-raising arbiters of Roman law – without offering a theoretical definition of the state itself. Of course, early-modern politics was easier to understand in this respect. For Machiavelli, Hobbes and Hegel, and the absolutist states of early-modern Europe in general, the unambiguous presence of the sovereign monarch helped stabilise the concept of the state.

[4] Georg Wilhelm Friedrich Hegel, *Elements of the Philosophy of Right*, ed. A.W. Wood, trans. H.B. Nisbet (Cambridge University Press, 2008), 366–7; Enrique Dussel, 'Eurocentrism and Modernity (Introduction to the Frankfurt Lectures)', *Boundary 2* 20, no. 3 (1 October 1993): 71–4; M. Crawford Young, *The African Colonial State in Comparative Perspective* (New Haven: Yale University Press, 1994), 17–39.

[5] Max Weber, *Economy and Society*, ed. Guenther Roth and Claus Wittich, vol. 2 (Berkeley: University of California Press, 1978), 969–89; Michel Foucault, *Discipline and Punish: The Birth of the Prison* (London: Penguin, 1977); Michel Foucault, 'Governmentality', in *The Foucault Effect: Studies in Governmentality with Two Lectures by and an Interview with Michel Foucault*, ed. Peter Burchell, Colin Gordon and Peter Miller (London: Harvester Wheatsheaf, 1991), 87–104.

[6] Charles Tilly, *Coercion, Capital and European States, AD 990–1992* (Oxford: Blackwell, 1992), 26, 98, 110; Weber, *Economy and Society*, 54 for the original definition.

[7] Perry Anderson, *Lineages of the Absolutist State* (London: Verso, 1974).

4   Introduction

In the twentieth century, and especially outside of the boundaries covered by the treaties of Westphalia, the problem is much more messy; on close examination the state has a disconcerting habit of unravelling to its constituent parts (or blurring seamlessly in to the corporations – like IBM – that now surround it).[8] The simplicity of the early-modern state seems fictional in this period. It was this imaginary unity that prompted the eminent structural functionalist, Radcliffe-Brown, in 1930 to ridicule the idea of the state as an entity with a will as 'a fiction of the philosophers' when he argued that 'there is no such thing as the power of the State; there are only, in reality, powers of individuals – kings, prime ministers, magistrates, policemen, party bosses, and voters'.[9] Many recent students of the state have taken this empirical scepticism about the unitary state further, adopting Abrams' observation that the idea of the state as an entity is a façade: 'an ideological artefact attributing unity, morality and independence to the disunited, amoral and dependent workings of the practice of government'.[10]

Anthropologists of the state have, accordingly, begun to explore the disparate ways in which the state is actually constituted – defined and experienced – in the languages that people use to describe and engage it. Gupta's anthropology of low-level officials in the villages of India, for example, shows convincingly that the rhetorics of corruption used by citizens, media and officials actually constitute the state and its effects.[11] In these accounts, far from being an autonomous institution, the state is a product of, and embedded within, the languages and practices of both the governed and the governing.

This idea of the state as a product of culture has been encouraged by a very influential turn across many disciplines towards the study of discourses – especially, recently, of science and engineering – in the formation of states in the nineteenth and twentieth centuries.[12] Foucault's

[8] James R. Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge, MA: Harvard University Press, 1986); Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, MA: MIT Press, 1996).

[9] Alfred Radcliffe-Brown, 'Preface', in *African Political Systems*, ed. Edward Evan Evans-Pritchard, Meyer Fortes and Rachel Dempster (Oxford: International African Institute, 1955), xxiii, http://library.wur.nl/WebQuery/clc/464172.

[10] Philip Abrams, 'Notes on the Difficulty of Studying the State', *Journal of Historical Sociology* 1, no. 1 (1988): 81; Timothy Mitchell, 'Society, Economy, and the State Effect', in *State / Culture: State-Formation after the Cultural Turn*, ed. George Steinmetz (Ithaca: Cornell University Press, 1999). The same essay appears in Timothy Mitchell, 'Society, Economy and the State Effect', *The Anthropology of the State: A Reader* 9 (2006): 169.

[11] Akhil Gupta, 'Blurred Boundaries: The Discourse of Corruption, the Culture of Politics, and the Imagined State', *American Ethnologist* 22, no. 2 (1 May 1995): 375–402.

[12] The argument was made convincingly in Philip Richard D. Corrigan and Derek Sayer, *The Great Arch: English State Formation as Cultural Revolution* (Oxford: Blackwell, 1985);

key arguments about state power – first, of the ordering effects of the micro-disciplines of sciences and institutions in assembling the modern state[13] and, second, of the turn to a new kind of sovereignty (very different from Machiavelli's self-preserving state) derived from the biological well-being of populations[14] – have wrought something like a conceptual revolution. The history of the colonies has been important in this movement. Studies of experts' fashioning new forms and structures of power as they sought new kinds of knowledge on the African continent have been deeply illuminating.[15] But they have, also, tended to obscure the comparatively limited powers and scope of the colonial state, and the inadequacy of an account of the state (in Africa) motivated by the search for knowledge.

The state in Africa – both the colony and its successor – has been described by many historians as a gatekeeper. Cooper, in particular, has shown that colonial and post-colonial states on the African continent survived by standing 'astride the intersection of the colonial territory and the outside world' and, critically, that they 'had weak instruments for entering the social and cultural realm'.[16] Far from being driven by a ubiquitous scientific curiosity about the well-being of the population, African states were built in an informational void without the ability to 'track the individual body or understand the dynamics of the social body'.[17] Many important studies have discussed the forms of cheap indirect rule, blind

Khaled Fahmy, *All the Pasha's Men: Mehmed Ali, His Army, and the Making of Modern Egypt* (Cairo: American University in Cairo Press, 1997); Bernard S. Cohn, *Colonialism and Its Forms of Knowledge: The British in India* (Delhi: Oxford University Press, 1997); James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998); Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002).

[13] Timothy Mitchell, 'The Limits of the State: Beyond Statist Approaches and Their Critics', *The American Political Science Review* (1991): 93–4; Foucault, *Discipline and Punish*.

[14] Foucault, 'Governmentality'; Mitchell, 'Society, Economy, and the State Effect', 87.

[15] Megan Vaughan, *Curing Their Ills: Colonial Power and African Illness* (Stanford: Stanford University Press, 1991); Scott, *Seeing like a State*; Mitchell, *Rule of Experts*; Patrick Harries, *Butterflies & Barbarians: Swiss Missionaries & Systems of Knowledge in South-East Africa* (London: James Currey Publishers, 2007); W. Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770–1950* (New York: Oxford University Press, 2008); William Beinart, Karen Brown and Daniel Gilfoyle, 'Experts and Expertise in Colonial Africa Reconsidered: Science and the Interpenetration of Knowledge', *African Affairs* 108, no. 432 (7 January 2009): 413–33; Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870–1950* (University of Chicago Press, 2011). Each of these studies can be read to show the severe geographical and financial limits of the colonial state's power.

[16] Frederick Cooper, *Africa Since 1940: The Past of the Present* (Cambridge University Press, 2002), 5.

[17] Frederick Cooper, *Decolonization and African Society: The Labor Question in French and British Africa* (Cambridge University Press, 1996), 335.

tax-farming and skeletal physical and administrative infrastructure that characterised the colonial state.[18] These show that typically the state in Africa was built to control trade – it began at the harbour, expanded to form the colonial city, followed the line of rail and relied heavily on revenues from the export of a single commodity. This has – until very recently – changed little in the post-colonial era, with only the state's ability to 'defend the gate' undergoing significant variation. One of the objects of this book is to show that the South African state shares this gatekeeping architecture with its continental peers; another is that the same technologies of biometric registration that are now seen as the most promising remedy for bureaucratic incapacity on the African continent played an important part in limiting the colonial state's intellectual and administrative ambitions.

This very constrained scope means that a cultural understanding of the state – one which works well for the sprawling bureaucracies of India or France[19] – is problematic on the African continent. Nor is the cultural explanation of state power proposed by Bourdieu helped by the fact that the agents of what has in many respects proven to be hegemonic religious change – colonial missionaries of many kinds – were frequently bitterly at odds with the colonial state.[20] The state on the African continent has done little of the cultural work that historians have demonstrated in detail elsewhere,[21] and its grasp over the social, where it exists at all, has long been feeble.[22]

This means that two influential approaches to understanding the modern state – which we can call reification and anthropology – are both

[18] Walter Rodney, *How Europe Underdeveloped Africa* (Washington: Howard University Press, 1982), 208–9; Claude Ake, 'Rethinking African Democracy', *Journal of Democracy* 2, no. 1 (1991): 38; Sara Berry, *No Condition Is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa* (Madison: University of Wisconsin Press, 1993), 22–42; Young, *The African Colonial State*, 100–29; Jeff Herbst, *States and Power in Africa: Comparative Lessons in Authority and Control* (Princeton University Press, 2000), 161–70.

[19] Gupta, 'Blurred Boundaries'; Pierre Bourdieu, 'Rethinking the State: Genesis and Structure of the Bureaucratic Field', in *State / Culture: State-Formation after the Cultural Turn*, ed. George Steinmetz (Ithaca: Cornell University Press, 1999).

[20] Jean Comaroff and John L. Comaroff, *Of Revelation and Revolution: The Dialectics of Modernity on a South African Frontier*, vol. 1 (University of Chicago Press, 1991), 261–87; Young, *The African Colonial State*, 97.

[21] Arno J. Mayer, *Persistence of the Old Regime: Europe to the Great War* (New York: Pantheon Books, 1981); P. Chatterjee, *Nationalist Thought and the Colonial World: A Derivative Discourse* (London: Zed Books, 1986); Corrigan and Sayer, *The Great Arch*; Alexander Woodside, *Lost Modernities: China, Vietnam, Korea, and the Hazards of World History* (Cambridge, MA: Harvard University Press, 2006).

[22] Jean-Francois Bayart, *The State in Africa: The Politics of the Belly* (London: Longman, 1993).

ill-suited to the project I have in mind here. Fortunately there is another
materialist and technological understanding of the state which becomes
evident from a careful consideration of the premises of the sociology of the
state. In his 1977 discussion 'on the difficult of studying the state' Abrams
was concerned to demonstrate that the state is an ideological artefact; to
do this he drew on an observation in Miliband's study of the capitalist
state which has since become famous: 'the "state" is not a thing … it does
not, as such, exist'.[23] Yet in an important sense Abrams (and Miliband)
are clearly both wrong. For the state is very much a thing, or, perhaps
more accurately, it is a constellation of things: roads, hospitals, telecom-
munication lines, computers, filing cabinets, weapons, bullion (to name
only a few). And at the core of these things is a coordinating bureaucracy
which, as many scholars have argued over many years, is very much an
object itself. 'The very term bureaucracy points to a form of governance
built around a thing', Hull notes in his work on the technologies of the
Pakistani state, 'the writing desk, and the documentary practices it sup-
ports'.[24] Historians have examined the physical work of the bureaucracy
in detail over many centuries and the results are compelling: at the heart
of the state lies a literary and paper-processing machine, one which has
been identified, studied and described in careful detail.[25] Indeed it was
this literary project of government – as Clanchy, Goody, Corrigan and
Sayer, Gorski, and Hull have each shown – that provided the vehicle for
the cultural changes that were produced by the modern state.[26]

Following the paperwork, of course, can confront the same problems
that Radcliffe-Brown identified for the state as an assembly of people.
How do we distinguish the writings of the church, or the records of the
largest corporations, from the formal bureaucracy? I think that this can
be very illuminating – Clanchy's work on the medieval English state is
one excellent example, and Hull's recent study of the Pakistani state
is another – by reconstructing the pathways that paper follows in the

[23] Abrams, 'Notes on the Difficulty of Studying the State', 69.
[24] Matthew S. Hull, 'Ruled by Records: The Expropriation of Land and the Misappropriation
of Lists in Islamabad', *American Ethnologist* 35, no. 4 (2008): 501–18.
[25] M.T. Clanchy, *From Memory to Written Record, England 1066–1307* (London: Edward
Arnold, 1979); Corrigan and Sayer, *The Great Arch*; Beniger, *The Control Revolution*;
Jack Goody, *The Logic of Writing and the Organization of Society* (Oxford University Press,
1986); P. Sankar, 'State Power and Record-Keeping: The History of Individualized
Surveillance in the United States, 1790–1935' (University of Pennsylvania, 1992);
Valentin Groebner, *Who Are You? Identification, Deception, and Surveillance in Early
Modern Europe* (New York: Zone Books, 2007); Jon Agar, *The Government Machine: A
Revolutionary History of the Computer* (Cambridge, MA: MIT Press, 2003).
[26] Corrigan and Sayer, *The Great Arch*; Philip S. Gorski, 'The Protestant Ethic Revisited:
Disciplinary Revolution and State Formation in Holland and Prussia', *The American
Journal of Sociology* 99, no. 2 (1993): 265–316; Hull, 'Ruled by Records'.

bureaucracy;[27] over the last two centuries that would often mean tracking files as they move between parliament, the executive branches of the government and officials in the provinces.[28] But in this book I will not be doing that in part because the state I am examining explicitly disavowed the old, dispersed documentary basis of bureaucracy. I have another set of paper-handling conventions in mind.

If, as Weber observed, the processing of paperwork is the defining characteristic of modern bureaucracy in both its public and private forms,[29] a particular subset of those documents – technologies of identification – lies at the heart of the work that the state arrogates to itself. These acts of identification can take many forms – passports, identity cards, birth certificates, drivers' licences – but they all, typically, hinge on processes of civil registration, the official recording of identification at birth, marriage and death.[30] Processes of identification working together make up an infrastructure of citizenship – a set of slowly emerging rules, standards and networks of communication – which give any state distinctive centres and, as many of the protagonists in this story insisted, a distinctive political character.[31] When I speak of the biometric state I have in mind a state that is organised around technologies and architectures of identification that are very different – and which function politically very differently – from the older forms of written identification that have produced the modern state.

A new state

The documentary state is very old. Its key elements – the registration of property, of tax and military recruitment liabilities and the recording of

27 Clanchy, *From Memory to Written Record*; Matthew S. Hull, 'Documents and Bureaucracy', *Annual Review of Anthropology* 41 (2012): 251–67.
28 An excellent example is Geoffrey Parker, *The Grand Strategy of Philip II* (New Haven: Yale University Press, 1998) which builds a study of the Spanish empire around the movement of paper.
29 Weber, *Economy and Society*, 957–88.
30 Jane Caplan and John C. Torpey, *Documenting Individual Identity: The Development of State Practices in the Modern World* (Princeton University Press, 2001); John Torpey, *The Invention of the Passport: Surveillance, Citizenship and the State* (Cambridge University Press, 2000); Colin J. Bennett and David Lyon, *Playing the Identity Card: Surveillance, Security and Identification in Global Perspective*, 1st edn (New York: Routledge, 2008); Keith Breckenridge and Simon Szreter, eds, *Registration and Recognition: Documenting the Person in World History*, Proceedings of the British Academy 182 (Oxford University Press, 2012).
31 Simon Szreter and Keith Breckenridge, 'Recognition and Registration: The Infrastructure of Personhood in World History', in *Registration and Recognition: Documenting the Person in World History*, ed. Keith Breckenridge and Simon Szreter, Proceedings of the British Academy 182 (Oxford University Press, 2012), 1–36.

personal and family names – have existed for thousands of years in the rice-growing societies of Asia.[32] In Europe these familiar features were formed a little more recently, mainly between the eleventh and the four-teenth centuries. Over 300 years, as Clanchy has particularly shown for England, writing, blessed by its association with an ascendant church, fitfully usurped the status and claims of oral and iconic forms of author-ity and power. In practice this meant that parchment documents (often forged by church officials) replaced spoken claims as guarantors of prop-erty and propriety; writing became the basis of law, and the main instru-ment of state extractions like taxation and recruitment; a new class of literate officials leaked from the church into the royal chanceries and then spread out – as agents of central government – to the parishes in the countryside.[33] Over the next half-millenium written record making and keeping became a massive and dense field of culture, acting to preserve and simplify property and to discipline the poor. This may have been pre-eminently the case in England, as Corrigan and Sayer have suggested, but historians have traced the administrative powers of writing in very similar processes throughout Europe, the Americas and parts of Asia.[34] It is no wonder then that the powers of documentary government rest (typ-ically undisturbed by rude empirical enquiry) at the heart of the most influential theories of state power produced in the century that separates the writings of Max Weber and James Scott.[35]

[32] Richard von Glahn, 'Household Registration, Property Rights, and Social Obligations in Imperial China: Principles and Practices', in *Registration and Recognition: Documenting the Person in World History*, ed. Keith Breckenridge and Simon Szreter, Proceedings of the British Academy 182 (Oxford University Press, 2012), 39–66; James C. Scott, *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia* (New Haven: Yale University Press, 2009); Woodside, *Lost Modernities*; on the Ancient Near East see Goody, *The Logic of Writing*.

[33] Clanchy, *From Memory to Written Record*; for similar process in Europe, see Groebner, *Who Are You?*; on the persistence of spoken and communal forms of respectability in Spain and Spanish America, see T. Herzog, *Defining Nations: Immigrants and Citizens in Early Modern Spain and Spanish America* (New Haven: Yale University Press, 2003).

[34] Jane Caplan, '"This or That Particular Person": Protocols of Identification in Nineteenth-Century Europe', in *Documenting Individual Identity: The Development of State Practices in the Modern World*, ed. Jane Caplan and John Torpey (Princeton University Press, 2001), 49–66; Corrigan and Sayer, *The Great Arch*; Torpey, *The Invention of the Passport*; Gorski, 'The Protestant Ethic Revisited'; Jill Lepore, *The Name of War: King Philip's War and the Origins of American Identity* (New York: Knopf, 1998); Walter D. Mignolo, *Darker Side of the Renaissance: Literacy, Territoriality and Colonization* (Ann Arbor: University of Michigan, 1995); Parker, *The Grand Strategy of Philip II*; Sankar, 'State Power and Record-Keeping'; Michael Warner, *The Letters of the Republic: Publication and the Public Sphere in Eighteenth Century America* (Cambridge, MA: Harvard University Press, 1990).

[35] Weber, *Economy and Society*, vol. 2, 957–94; Foucault, *Discipline and Punish*, especially 184–96; A. Giddens, *The Nation-State and Violence*, vol. 2, *A Contemporary Critique of Historical Materialism* (Berkeley: University of California Press, 1985), 174–96; Michael

In our own time a transformation very like the one that Clanchy described seems to be under way. Some parts of this process are well known. Since the early 1970s, a globally networked, digital order – in which the most important information processing systems are outsourced to, or owned by, one of a small group of international corporations – has come to dominate most of the planet. There is no novelty in this claim; many important writers have pointed to elements of the process over the last two decades.

Twenty years ago Sassen showed that a global city had emerged from the real-time trading in financial markets in London, New York and Tokyo. The citizens of this global city, often connected to each other by computer terminals, continue to live mostly detached from the levelling constraints of local states (even after they have been rescued from bankruptcy by taxpayer bailouts).[36] 'Today, we live in a global society', Mann observed before it had become obvious: 'It is not a unitary society, nor is it an ideological community or a state, but it is a single power network.'[37] In a similar vein, Castells followed the influence of transnational firms, multilateral institutions and tightly organised global economies in the fashioning of a twenty-first century network state. (Castells has been proven wrong about Africa being structurally excluded from this network society – where something like the opposite has actually happened – but he was not alone in this.)[38]

In the richest countries Lyon has traced a new kind of surveillance state emerging from the feedback and storage capabilities of ubiquitous computers and the twin imperatives of controlling integrated welfare services and global national security.[39] Ironically these grand informational ambitions seem actually to have weakened many of the old surveillance and managerial powers of the documentary state. Agar, following the administrative and information-handling capacity of the British state in detail over the twentieth century, has shown that the contradictory imperatives to manage almost universal welfare benefits and reduce costs through the deployment of large-scale computer systems after the 1970s

Mann, *The Sources of Social Power: The Rise of Classes and Nation-States, 1760–1914*, vol. 2 (Cambridge University Press, 1993), 40–2, 282–5, stresses communication and education.

[36] Saskia Sassen, *The Global City: New York, London, Tokyo* (Princeton University Press, 1991).

[37] Mann, *The Sources of Social Power*, vol. 2, 11.

[38] Manuel Castells, *The Rise of the Network Society* (Oxford: Blackwell, 1996), 88–102; Manuel Castells, *The Power of Identity*, vol. 2, 2nd edn (Oxford: Wiley Blackwell, 1997), 303–366.

[39] D. Lyon, *The Electronic Eye: The Rise of Surveillance Society* (Minneapolis: University of Minnesota Press, 1994), 83–118; Agar, *The Government Machine*, 369–77.