

Biopower Today

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Abstract

In this article we undertake some conceptual clarification of the concepts of biopower and biopolitics, and argue for their utility in contemporary analysis. We consider Foucault's development of these concepts, and differentiate his view, which is close to ours, from the philosophical take-up of the terms by Giorgio Agamben and Antonio Negri. Biopower, we suggest, entails one or more truth discourses about the 'vital' character of living human beings; an array of authorities considered competent to speak that truth; strategies for intervention upon collective existence in the name of life and health; and modes of subjectification, in which individuals work on themselves in the name of individual or collective life or health. We argue that, while exceptional forms of biopower, especially in conditions of absolutist dictatorship, and when combined with certain technical resources, can lead to a murderous 'thanatopolitics'—a politics of death—biopower in contemporary states takes a different form. It characteristically entails a relation between 'letting die' (laissez mourir) and making live (faire vivre)—that is to say strategies for the governing of life. Using examples from our own current research, we consider recent developments in biopower around three themes: race, population and reproduction, and genomic medicine.

Keywords Biopolitics, Biopower, Genomics, Population, race, reproduction

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Q: Isn't it logical, given these concerns, that you should be writing a genealogy of biopower?

MF: I have no time for that now, but it could be done. In fact, I have to do it. (Foucault, 1984: 344).

What is 'biopower'?¹ In a book ostensibly devoted to the history of sexuality, *La Volonté du savoir*, published in 1976 (English trans. 1978), Michel Foucault included six highly provocative pages on this theme in a chapter entitled 'Right of Death and Power over Life'. For a long time, he argued, one of the privileges of sovereign power was the right to decide life and death, a right that, by the classical age, had been constrained to occasions when the sovereign himself was threatened from enemies without and within. This was the juridical form of sovereign power—the right of a ruler to seize things, time, bodies, ultimately the life of subjects. It was the model of power that was codified and generalized in classical political philosophy—a model that remained essentially unaltered when the 'king's head' was displaced from sovereign to state. But, Foucault argued, since the classical age, deduction has become merely one element in a range of mechanisms working to generate, incite, reinforce, control, monitor, optimize and organize the forces under it. While external wars are bloodier than ever, and regimes visit holocausts upon their own populations, he did not consider these wars to be waged in the name of the sovereign, but in the name of the existence of everyone:

... entire populations are mobilized for the purpose of the wholesale slaughter in the name of life necessity... It is as managers of life and survival, of bodies and the race, that so many regimes have been able to wage so many wars, causing so many men to be killed. (Foucault, 1978: 137)

Power, Foucault argues, is now situated and exercised at the level of life.

Foucault promised to flesh out his sweeping generalizations in one of the six proposed volumes of the history of sexuality whose titles appear on the book's back jacket. That promise was not fulfilled, although he devoted a number of his 1976 Lectures to this theme. But he did propose a rather simple and now familiar bipolar diagram of power over life. In this diagram, one pole of biopower focuses on an anatomo-politics of the human body, seeking to maximize its forces and integrate it into efficient systems. The second pole is one of regulatory controls, a biopolitics of the population, focusing on the species body, the body imbued with the mechanisms of life: birth, morbidity, mortality, longevity. He claims that this bipolar technology, which begins to be set up in the seventeenth century, seeks 'to invest life through and through' (Foucault, 1978: 139) And, by the nineteenth century, he argues, these two poles were conjoined within a series of 'great technologies of power' of which sexuality was only one. In so establishing themselves, new kinds of political struggle could emerge, in which 'life as a political object' was turned back against the controls exercised over it, in the name of claims to a 'right' to life, to one's body, to health, to the satisfaction of one's needs.

At its most general, then, the concept of 'biopower' serves to bring into view a field comprised of more or less rationalized attempts to intervene upon the vital characteristics of

1 This paper was first presented at Vital politics: Health, medicine and bioeconomics into the twenty-first century, London School of Economics and Political Science, 5–7 September 2003.

human existence. The vital characteristics of human beings, as living creatures who are born, mature, inhabit a body that can be trained and augmented, and then sicken and die. And the vital characteristics of collectivities or populations composed of such living beings. And, while Foucault is somewhat imprecise in his use of the terms, within the field of biopower, we can use the term 'biopolitics' to embrace all the specific strategies and contestations over problematizations of collective human vitality, morbidity and mortality; over the forms of knowledge, regimes of authority and practices of intervention that are desirable, legitimate and efficacious.

More than quarter of a century after the introduction of this concept, at the threshold of our current 'biological century', this contested field of problems and strategies is more crucial and enigmatic than ever.² Yet surprisingly little work has been done to develop Foucault's own sketchy suggestions into a set of operational tools for critical inquiry. The term 'biopower' is more likely to be taken to refer to the generation of energy from renewable biological material. The term 'biopolitics' has been taken up by advocates of a range of environmental and ecological causes.³ However, we feel that Foucault's concepts of biopower and biopolitics retain considerable analytical utility. As a first step towards some conceptual clarification, and drawing on our previous work in this area, we propose that the concept of biopower designates a plane of actuality that must include, at a minimum, the following elements (Rabinow, 1994, 1996, 1999; Rose, 2001, 2006):

- One or more truth discourses about the 'vital' character of living human beings, and an array of authorities considered competent to speak that truth. These truth discourses may not themselves be 'biological' in the contemporary sense of the discipline, for instance they may hybridize biological and demographic or even sociological styles of thought, as in the contemporary relations of genomics and risk, merged in the new language of susceptibility.
- Strategies for intervention upon collective existence in the name of life and health, initially addressed to populations that may or may not be territorialized upon the nation, society or pre-given communities, but may also be specified in terms of emergent biosocial collectivities, sometimes specified in terms of categories of race, ethnicity, gender or religion, as in the emerging forms of genetic or biological citizenship.
- Modes of subjectification, through which individuals are brought to work on themselves, under certain forms of authority, in relation truth discourses, by means of practices of the self, in the name of their own life or health, that of their family or some other collectivity, or indeed in the name of the life or health of the population as a whole: Rabinow has examined the formation of new collectivities in terms of 'biosociality',

2 Sydney Brenner is among those who has examined key features of our 'biological century': see, for example, Brenner (2000). Gilles Deleuze, in his *Foucault* (1988), has a provocative appendix where he talks about the future of biopower.

3 For example, the Biopolitics International Organization, based in Greece, which focuses on environmental protection, while in *Christian biopolitics: A credo and strategy for the future*, by Kenneth Cauthen, seeks to nurture 'an emerging new consciousness among many potential dreamers and doers in the churches who can help provide us with the visions and the values we need to promote a movement toward an ecologically optimum world community full of justice and joy in which the human race can not only survive but embark on exciting new adventures of physical and spiritual enjoyment. (1971: available online at <http://www.religion-online.org/showchapter.asp?title=2301C=2272>).

and Rose has examined the formation of kinds of human subject in terms of ‘somatic individuality’.

The limits of biopower

We frame our initial specification in these limited terms partly in response to the ways in which the terms ‘biopower’ and ‘biopolitics’ have been used by two of our leading contemporary philosophers—Giorgio Agamben and Antonio Negri. Agamben and Negri have each made these terms central to their critical analyses of the politics of the present. Their work has had a very significant impact on social and political thought, especially in the United States. What appears to attract many is the generality of their claims to characterize the nature and essence of the present epoch. These authors suggest that contemporary biopower takes the form of a politics that is fundamentally dependent on the domination, exploitation, expropriation and, in some cases, elimination of the vital existence of some or all subjects over whom it is exercised. Contemporary biopower, they imply, is a form of power which ultimately rests on the power of some to threaten the death of others. Yet we consider the epochal philosophical deployments of the terms to be misleading; it is relevant to consider them in a little more detail in order to counterpose them to our own approach.⁴

Empire

For Hardt and Negri, in *Empire*, biopower is an encompassing, totalizing term—biopower serves to secure the dominion of a global form of domination that they term ‘Empire’ (Hardt and Negri, 2000). Theirs is a neo-Marxist reading: their first premise is that the work of power should be understood as the extraction of some kind of ‘surplus value’ from human life upon which Empire depends. This is what they mean when they assert that all contemporary politics is biopolitics: it is a ‘form of power that regulates social life from its interior’ (2000: 23). Further, they conflate this omnipotent and all pervasive biopower with an idea loosely derived from a short and speculative essay by the French philosopher Gilles Deleuze, in which he argues that we have moved from ‘societies of discipline’ to ‘societies of control’ (Deleuze, 1995). Michel Foucault (1977) had characterized ‘disciplinary societies’ as those in which the management of inclusion and exclusion was accomplished by an archipelago of disciplinary institutions dotted across the social field—asylums, factories, schools, hospitals, universities—each seeking to implant a mode of conduct into body and its correlate soul. Today, argued Deleuze, writing in the closing decades of last century, control was not confined within such institutions, but was immanent in the flexible, fluid and fluctuating networks of existence itself. Hardt and Negri take up this idea when they suggest that biopolitics is a form of power ‘expressed as a control that extends throughout the depths of the consciousnesses and bodies of the population’ (2000: 24). They claim that this biopolitical power is exercised in the name of multinational and transnational corporations

⁴ In France, the reception of Negri has been minimal and that of Agamben has turned more specifically on his claims about the concentration camps (see Mesnard, 2004).

which, since the second half of the twentieth century, have chosen ‘to structure global territories bio-politically’ (2000: 31).

Biopower, here, is enrolled in an attempt to resurrect a revolutionary view of world history, which ends with a twist of Christianity to inspire resistance to Empire: Hardt and Negri cite a legend about St Francis of Assisi who ‘refused every instrumental discipline, and ... posed a joyous life ... against the will of power and corruption. Once again in post modernity we find ourselves in Francis’s situation, posting against the misery of power the joy of being’ (2000: 413). Now we would certainly agree that it is necessary to extend the scope of traditional analyses of economic exploitation and geopolitics in order to grasp the ways in which the living character of human beings, and indeed of other living beings, is being harnessed by ‘biocapital’.⁵ But it is difficult to see what analytical work can be done by such an expanded concept of biopower: in the end, Hardt and Negri merely provide a superficial description of certain aspects of our present, framed within the kind of grand narrative of history that other theorists of postmodernity had proclaimed a thing of the past. But political evaluation of the forms of biopolitics is evaded, submerged under their simplistic Manichean opposition of a mysterious global Empire to an even more phantom ‘multitude’. This version of the concept of ‘biopower’ is quite antithetical to that proposed by Foucault: the concept is emptied of its critical force—it can describe everything but analyse nothing.

It might be useful here to remind ourselves that when Foucault introduced the term in the last of his Collège de France lectures of 1975–6, *Society must be defended* (2002), he is precise about the historical phenomena which he is seeking to grasp. He enumerates them: issues of the birth rate, and the beginnings of policies to intervene upon it; issues of morbidity, not so much epidemics but the illnesses that are routinely prevalent in a particular population and sap its strength, requiring interventions in the name of public hygiene and new measures to coordinate medical care; the problems of old age and accidents to be addressed through insurantal mechanisms; the problem of the race and the impact upon it of geographic, climatic and environmental conditions, notably in the town. The concept of biopower is proposed after ten years of collective and individual research on the genealogy of power over life in the eighteenth and nineteenth centuries.⁶ Foucault himself had lectured on the politics of health in the eighteenth century in Japan and in Brazil; his seminar members were producing detailed historical studies of the role of medicine, town planning, royal shipyards and a host of other sites in which experiments about how to produce and regulate ways of maximizing the capacities of both the population and the individual as a target of power are being carried out. The concept of biopower—like that of discipline—was not trans-historical or metaphoric, but precisely grounded in historical, or genealogical, analysis.

We should also note that biopower, for Foucault, does not emerge from, or serve to support, a single power bloc, dominant group or set of interests. While initially linking biopolitics to the regulatory endeavours of developing States, Foucault recognized that ‘the great overall regulations that proliferated throughout the nineteenth century ...

5 On biocapital, see Rose (2006).

6 Note that these lectures were given in the same year that the first volume of *History of sexuality* was published in France, and that, aside from a few passing comments, Foucault never returned to the concept of biopower again.

are also found at the sub-State level, in a whole series of sub-State institutes such as medical institutions, welfare funds, insurance, and so on' (2002: 250). This is the point at which Foucault began to develop his concept of 'governmentality', a concept whose whole rationale was to grasp the birth and characteristics of a whole variety of ways of problematizing and acting on individual and collective conduct in the name of certain objectives which do not have the State as their origin or point of reference. As he develops this line of thought concerning the multiplicity of forms and sources of authority, Foucault also distanced himself from the view that such power over life is unambiguously nefarious.⁷ This is also the turning point that leads Foucault to a fascination with ancient modes of subjectification and the possibilities of freedom. In this context, it is worth remembering that medicine is perhaps the oldest site where one can observe the play of truth, power and ethics in relation to the subject, and to the possibilities of a good, or as the Greeks would have it, a flourishing, life.

Homo sacer

Giorgio Agamben, in a series of haunting books, identifies the Holocaust as the ultimate exemplar of biopower, and biopower as the hidden meaning of all forms of power from the ancient world to the present. In particular he explores the moments that he terms, after Carl Schmitt, 'states of exception', when a sovereign state declares a time or a place where the rule of law can be suspended in the name of self-defence or national security (Agamben, 1995, 1996, 1998, 2000a, 2000b, 2005). There is much to be learned from these studies of the profound traumas that mark European histories: we agree that Holocaust is not an exceptional moment of throwback to a singular barbarianism, but an enduring possibility intrinsic to the very project of civilization and the law. However, Agamben grounds his analysis in a particular way that we find problematic. He argues that all power rests ultimately on the ability of one to take the life of another—it is a power over life grounded in the possibility of enforcing death. He characterizes this power by reference to the obscure metaphor of *homo sacer*—the enigmatic figure in Roman law whose crimes made his sacrifice impossible but who could be killed with impunity. Like this figure, who is reduced from *bios*—crudely, the way of life proper to an individual or group in a polity—to *zöe*—'bare life'—he suggests that the birth of biopower in modernity marks the point at which the biological life of subjects enters politics and belongs entirely to the State. The ultimate grasp of the Sovereign or the State over the lives of subjects is exemplified, for him, in the concentration camps, labour camps and death camps of the Nazis: sovereign States depend on their capacity to create states of exception. Such states may be exceptional, but are nonetheless immanent in modernity itself—a fourth space added to that of state, nation and land, in which inhabitants are stripped of everything but their bare life, which is placed without recourse in the hands of power. Indeed they are the 'nomos' of modernity: 'This is why the camp is the very paradigm of political space at the point at which politics becomes biopolitics and *homo sacer* is virtually confused with the citizen' (Agamben, 1998: 171).

Agamben takes seriously Adorno's challenge—how is it possible to think after Auschwitz (Mesnard and Kahan, 2001)? But, for that very reason, it is to trivialize Auschwitz

⁷ See, for example, his interview on social security, entitled 'The risks of security' (English trans. Foucault, 2000: 365–81).

to see it as the hidden possibility in every instance where living beings enter the scope of regulation, control and government. The power to command under threat of death is exercised by States and their surrogates in multiple instances, in micro forms and in geopolitical relations. But this does not demonstrate that this form of power—commands backed up by the ultimate threat of death—is the guarantee or underpinning principle of all forms of biopower in contemporary liberal societies. Nor is it useful to use this single diagram to analyse every contemporary instance of thanatopolitics—from Rwanda to the epidemic of Aids deaths across Africa. Surely the essence of critical thought must be its capacity to make distinctions that can facilitate judgement and action.⁸

Holocaust is undoubtedly one configuration that modern biopower can take. Racism allows power to subdivide a population into subspecies, to designate these in terms of in terms of a biological substrate, and to initiate and sustain an array of dynamic relations in which the exclusion, incarceration or death of those who are inferior can be seen as something that will make life in general healthier and purer. As Foucault put it in 1976, ‘racism justifies the death-function in the economy of biopower by appealing to the principle that the death of others makes one biologically stronger insofar as one is a member of a race or a population’ (2002: 258). It is true that in this lecture he suggests that it is ‘the emergence of biopower that inscribes [racism] in the mechanisms of the State ... as the basic mechanism of power, as it is exercised in modern States’ (2002: 254). But the Nazi regime was, in his view, exceptional—‘a paroxysmal development’:

We have, then, in Nazi society something that is really quite extraordinary: this is a society which has generalized biopower in an absolute sense, but which has also generalized the sovereign right to kill ... to kill anyone, meaning not only other people but also its own people ... a coincidence between a generalized biopower and a dictatorship that was at once absolute and retransmitted throughout the entire social body. (2002: 260)

Biopower, in the form it took under National Socialism, was a complex mix of the politics of life and the politics of death—as Robert Proctor (1999) points out, Nazi doctors and health activists waged war on tobacco, sought to curb exposure to asbestos, worried about the over-use of medication and X-rays, stressed the importance of a diet free of petrochemical dyes and preservatives, campaigned for whole-grain bread and foods high in vitamins and fibre, and many were vegetarians. But, within this complex, the path to the death camps was dependent upon a host of other historical, moral, political and technical conditions. Holocaust is neither exemplary of thanatopolitics, nor the hidden dark truth of biopower.

Sovereignty

Our criticism here is linked to a disagreement about ‘sovereignty’. While Hardt and Negri differentiate ‘Empire’ from the forms of sovereignty that emerged in the nation state, the diagram remains more or less unaltered: although ‘imperial sovereignty ... is organized not around one central conflict but rather through a flexible network of microconflicts’, Empire nonetheless gathers unto itself the power relations that traverse all those ‘elusive,

⁸ This is a point that Agamben himself makes elsewhere.

proliferating and non-localizable contradictions' (2000: 201). The monolithic image of Empire thus tries to condense and unify all those forms and relations into a single Sovereign Power, to which can only be opposed some force that is radically Other, gestured to in the name 'multitude': the multitude, then, is the contemporary incarnation of the regicide, who, in eliminating the sovereign, will inaugurate an epoch in which sovereign power is re-appropriated by subjects themselves. Despite its apparent radicalism, anti-capitalists would do well to be wary of the religious underpinnings of this fable of resistance as deliverance to a promised land.

For Agamben, sovereignty also has something of a sacred form—the ancient ritual declaration of *homo sacer* remains present today in the capacity of the sovereign State to establish the state of exception, to commit those stripped of the rights of *bios* to those zones, and to torture or kill those reduced to the status of *zōe*—bare life—without legal restraint. But this sovereign power is no longer confined to those who are explicitly agents of the State—it apparently extends to all those who have authority over aspects of human vital existence. Hence Agamben argues that the power over life exercised today by 'the jurist . . . the doctor, the scientist, the expert, the priest' arises from the alliance with the Sovereign into which they have entered; like those who populated an earlier image of power, Althusser's Ideological State Apparatuses, wittingly or unwittingly they do the Sovereign's will (Agamben, 1998: 122). *Homo sacer*, for Agamben, is thus not an historically marginal phenomenon: it demands our attention as critical thinkers precisely because it is the ordering principle of contemporary societies. Against such a 'growing bio-political nightmare' the only solution seems equally sacred: no wonder Agamben invokes the figure of a messianic 'end of time', taken from Walter Benjamin, as one possible way out.

The interpretation of contemporary biopolitics as the politics of a State modelled on the figure of the Sovereign, and of all forms of biopolitical authority as agents of that Sovereign, suits the twentieth-century absolutisms of the Nazis and Stalin. But we need a more nuanced account of power, and of sovereign power, to analyse contemporary rationalities and technologies of biopolitics. Sovereignty did, of course, entail the right to take life, but the essence of pre-modern sovereign power was its sporadic and discontinuous nature—that indeed was the rationale for its excesses. The totalization of sovereign power as a mode of ordering daily life at all times and places across a territory would be too costly; indeed, as many historians have argued, the excessive form in which this power is exercised, for example in spectacular public executions and the elaborate rituals of the courtroom, seeks to compensate for its sporadic nature. Sovereignty, in this sense, is precisely a diagram of a totalized and singular form of power not a description of its implementation. Certainly some forms of colonial power sought to operationalize it, but, in the face of its economic and governmental costs, colonial statecraft was largely to take a different form. The two megalomaniac State forms of the twentieth century—Stalin's Russia, Hitler's Germany—also sought to actualize it, as have some others in their wake: Albania under Hoxha, North Korea . . . But no historian of pre-modern forms of control could fail to notice the dependence of sovereign rule on a fine web of customary conventions, reciprocal obligations and the like—in a word, a moral economy whose complexity and scope far exceeds the extravagant displays of the sovereign. Sovereign power is at one and the same time an element in this moral economy and an attempt to master it. A cursory glance at the work of Jacques Le Goff—whose work Foucault knew well—or Ferdinand Braudel and the whole

Annales project, or, for English readers, the writings of E.P. Thompson should be sufficient to dispel such recent misreadings (Hay, 1975; Thompson, 1975; Braudel and Labrousse, 1976; Le Goff, 1980, 1990).

Over the eighteenth and nineteenth centuries, nation states, in addition to their theatres of power and public display, began to be key mobilizers of the internal forces of their territories so as to secure their objectives of prosperity and security. But the governmentalized states of the late nineteenth century took the shape that they did through the prior formation of ever-growing apparatuses of knowledge collection and problematization that formed alongside the state apparatus, often in conflict with it, in the emergent terrain of the 'social'. From this time on, states can rule only because of the ways in which they manage to connect themselves up to these apparatuses, which have their own logics and viscosity. So long as regimes aspire to liberalism, such apparatuses and authorities will exercise demands and constraints on central powers. Non-state bodies have played a key role in biopolitical struggles and strategies since the origin of 'the social'—philanthropic organizations, social investigators, pressure groups, medics, feminists and assorted reformers have all operated on the territory of biopower.

Since the end of the Second World War, and taking here only the example of health, a range of powerful agencies within states and a range of transnational bodies have taken on a new importance. So have a host of bioethics commissions, regulatory agencies and professional organizations: a whole '*bioethical complex*', in which the power of medical agents to 'let die' at the end of life, the start of life or in reproduction, are simultaneously enhanced by medical technology and regulated by other authorities as never before. Further, we have seen the rise of new kinds of patients' groups and individuals, who increasingly define their *citizenship* in terms of their rights (and obligations) to life, health and cure. And, of course, new circuits of *bioeconomics* have taken shape, a large scale *capitalization of bioscience* and *mobilization* of its elements into new exchange relations: the new molecular knowledges of life and health are being mapped out, developed and exploited by a range of commercial enterprises, sometimes in alliance with States, sometimes autonomous from them, establishing constitutive links between life, truth and value. This is a far from homogeneous field of agents, tactics, strategies and objectives. Yet, at the same time, States do retain power to designate zones of exception, even when their legality is dubious—the camp remains a grim reality from the wars in the Balkans, through Guantanamo Bay to the 'detention centres' springing up across Europe to incarcerate 'asylum seekers' and others who trespass on the spaces of bios but are not admitted. Do these all form part of a single configuration of biopower? This remains to be demonstrated. And even if they did, we doubt that such a biopower could be characterized solely, or even principally, in terms of its propensity for 'making die': for while death is part of the picture, it takes the form of 'letting die' as much as of 'making die'. But also, of course, central to the configuration of contemporary biopower are all those endeavours that have life, not death, as their telos—projects for 'making live'.

We have suggested that the concept of biopower seeks to individuate strategies and configurations that combine three dimensions or planes—a form of truth discourse about living beings and an array of authorities considered competent to speak that truth; strategies for intervention upon collective existence in the name of life and health; and modes of subjectification, in which individuals can be brought to work on themselves, under certain forms

of authority, in relation to truth discourses, by means of practices of the self, in the name of individual or collective life or health. Although we draw these elements from Foucault's all too brief interventions on the concept, it is worth remembering that his principal site of investigation was historical. He studied the emergence of forms of power in the eighteenth century, their transformation in the nineteenth and, to some limited extent, an examination of the forms taking shape at the end of the nineteenth century. Rationalities, strategies and technologies of biopower changed across the twentieth century, as the management of collective life and health became a key objective of governmentalized states, and novel configurations of truth, power and subjectivity emerged to underpin the rationalities of welfare and security as well as those of health and hygiene (Donzelot, 1979; Rose, 1985; Ewald, 1986; Rabinow, 1989; Rose, 1999). It would certainly be misleading simply to project Foucault's analysis forward as a guide to our present and its possibilities. One key mutation concerns the relations between what one might term, clumsily, the macro and the micro, or, following Deleuze, the molar and the molecular, poles of this mode of power. That is to say, on the one hand, the emphases and relations on ways of thinking and acting at the level of population groups and collectivities, variously defined; and, on the other hand, the individualization of biopolitical strategies. Undoubtedly, in the era of the social state—and in those locales where such states still form the organizing principle of political struggle—it was the molar that was privileged. In the twentieth century, States not only developed or supported insurantal mechanisms of security, but gathered together, organized and rationalized the loose threads of medical provision, specified and regulated standards of housing, engaged in campaigns of health education and the like. Even liberal States also played their role in the battle against degeneracy, imposing immigration controls, sometimes legitimating compulsory or quasi-compulsory sterilization, encouraging organizations giving eugenic guidance on marriage and procreation and so forth. Of course, each of these was to have its 'molecular' counterpart, for example in the transformation of the home into a machine for health, and the education and solicitation of mothers as ancillary workers in the health care of their children.

Today, much of this configuration remains, and, indeed, some of it has been translated to a supranational level in the endeavours of the European Union, the World Bank and the like. But, with the decline of the domain of the social as a privileged site of national objectivation and intervention in the 'advanced liberal' societies of the West, we observe new collective formations emergent everywhere (Rabinow, 1996; Rose and Novas, 2005). At the same time, as we can observe in the politics surrounding the sequencing of the human genome, we see the birth of new modes of individualization and conceptions of autonomy with their associated rights to health, life, liberty and the pursuit of a form of happiness that is increasingly understood in corporeal and vital terms (Rabinow, 1994; Rose, 2001).

Analytics of biopower

To develop this argument further, drawing on our current research, we will focus on three topics that seem to us to condense some of the biopolitical lines of force active today: race, reproduction and genomic medicine. Of course, to place all these diverse developments within the ambit of biopower is not to imply that there is some unity at work here, or some essence—truth or falsity—that all these forms exemplify or embody. We need to

recognize dispersion, contingency and virtuality, although not with deconstructionist intent. Before we can see whether some general political rationality is emerging, the task of analysis is to articulate some preliminary diagnoses at a smaller scale. Placing the evidence from such analyses in the framework of biopower, we think we can begin to identify and analyse elements of such a domain, though it is neither stable nor homogeneous, nor does merely repeat patterns familiar from history. A modest empiricism, attentive to peculiarities, to small differences, to the moments when shifts in truth, authority, spatiality or ethics make a difference for today as compared to yesterday, reveals configurations that do not conform to the images provided by our philosophers.⁹ In these configurations, race, health, genealogy, reproduction and knowledge are intertwined, continually recombining and transforming one another. By this we mean that knowledge of health transforms the idea of race, that ideas of genealogy are reframed by new conceptions of reproduction, that changing ideas of genealogy radically impact upon the politics of race, races and racism. Let us turn to explore some of these issues in some more detail.

Race

Race, together with health, and in variable relations with it, has been one of the central poles in the genealogy of biopower.¹⁰ Conceptions of race formed a prism not just for the imagination of the nation, but also for the political management of national health and vitality, and of international competitiveness, from the so-called 'war of nations' in the eighteenth century (the topic of several lectures by Foucault in *Society must be defended*), through the massive biologization of race in the nineteenth century, linked to pre- and post-Darwinist evolutionary thinking and applied both within states and in their colonial dominations, to the later nineteenth century obsession with degeneracy and race suicide, and the strategies of eugenics that spread from the United States to Japan and elsewhere in the first half of the twentieth century. After the Second World War, official racialist discourses were discredited: by 1963, for example, the United Nations Declaration on the Elimination of All Forms of Racial Discrimination took as one of its premises 'that any doctrine of racial differentiation or superiority is scientifically false, morally condemnable, socially unjust and dangerous, and that there is no justification for racial discrimination either in theory or in practice' (United Nations General Assembly, 1963: Preamble).¹¹ Of course, racialist practices hardly subsided, but a biological understanding of racial categories was no longer 'in the true' in political or policy discourse. In part due to the persistent interventions of radical critics, the link between biological understandings of distinctions among population groups and their socio-political implications seemed broken or at least de-naturalized. Many biologists still believed they encountered such differences, not least in examining the prevalence of particular diseases in different regions or the efficacy of medicines in different national populations, but such arguments tended to remain in the technical literature. Some individuals and groups persisted in making public claims for politically

9 We have discussed our approach to empiricism elsewhere: see our Introduction to Foucault et al. (2003), and the Introduction to Rose (1999), especially pp. 11–15.

10 This argument is developed in more detail in *The politics of life itself* (Rose 2006: ch. 6).

11 To be found on line at <http://www.unhcr.ch/html/menu3/b/9.htm>

pertinent correlation between human qualities and racially differentiated biological capacities in a whole number of controversies from education to criminality, but even those with scientific credentials, such as William Shockley, largely argued this from outside the truth discourses of biology. In many countries, not least the United States, race was crucial as a socio-economic category, a mark of discrimination and a mode of identification that remained extremely salient socially and politically, from the allocation of federal funds to the manifestations of identity politics. But, despite the fact that race functioned as a marker of belonging and the basis of a claim to disadvantage, even when groups or individuals sought to trace their 'roots' they seldom related this genealogy to a biological substrate. The same is true of the murderous racist wars that spread across Europe in the wake of the demise of the Soviet empire, from Armenia to the Balkans. Appeals to racial identities to ground the elimination of other groups needed no justification in the truth discourse of biology. While, in Rwanda, Hutus referred to Tutsis as 'cockroaches', such epithets were hardly elements in a political rationality drawing on biological understandings of racial difference.

At the turn of the new century, however, race is once again re-entering the domain of biological truth, viewed now through a *molecular gaze*. At a certain moment, when it became clear that humans shared over 98 percent of their genome with chimpanzees, and that inter-group variations in DNA sequences were greater than intra-group variations, it appeared that genomics itself would mark the terminal point of biological racism (perhaps even species-ism). But this humanitarian dream proved to be short-lived. A new molecular deployment of race has emerged seemingly almost inevitably out of genomic thinking. Critics denounced the model of a single genome that underpinned the Human Genome Project, fearing that it would establish a white male norm. The first move here was cast as ethical: as the initial proposer of this work, L. Luca Cavalli-Sforza, put it: 'to explore the full range of genome diversity within the human family' and 'to help combat the widespread popular fear and ignorance of human genetics and . . . make a significant contribution to the elimination of racism' (quoted in M'Charek, 2005: 5–6). Despite criticism, this effort to ensure the recognition of diversity in the framing of scientific truth as an essential dimension of genomic knowledge was later adopted by the Human Genome Project (HUGO), which provided US \$1.2 million to set up workshops to develop the technical and organizational aspects of the project, to consider the social and ethical implications, and to conduct a pilot study (Reardon, 2001; M'Charek, 2005; Reardon, 2005).

Genome mapping led to the conclusion that, while the DNA sequence of any two randomly selected individuals will be 99.9 percent identical, the variations at the level of single DNA base—called Single Nucleotide Polymorphisms or SNPs—are very significant, notably in relation to susceptibility to disease. On average, it was claimed, one letter in 1,000 differed between two individuals—which made a total of many million variations between them—estimates of the number ranged from 6 million to 15 million. The National Institutes of Health (NIH) and the Wellcome Trust have given considerable funds to research into the establishment of genomic differences at the single nucleotide level. Thus, in 1999, Wellcome announced a consortium with ten pharmaceutical companies to find and map 300,000 common DNA sequence variations. Further, it became clear that sets of nearby SNPs on the same chromosome are inherited in blocks. The pattern of SNPs on a block is termed a haplotype. While blocks may contain a large number of SNPs, a few

SNPs—known as tag SNPs—are enough to uniquely identify a haplotype. Haplotype mapping promised a more economical way of identifying SNPs relevant to disease, and the NIH and Wellcome, together with labs in Japan and China, are collaborating in an international HapMap project. Such funding has been justified precisely in biopolitical terms, as leading towards and ensuring the equal health of the population in all—or some—of its diversity. For example, to create the HapMap, DNA will be taken from blood samples collected by researchers in Nigeria, Japan, China and the United States—from US residents with ancestry from northern and western Europe. While the samples will be anonymous, they will be identified by the population from which they were collected. The SNP differences that account for 0.1 percent of the 3 billion base pairs of the human genome seem to provide ample space for population differentiations as they affect differences that have significance for human health.

The science itself, and the recognition of the variability of the human genome at the level of the single nucleotide, thus immediately open up a new way of conceptualizing population differences—in terms of geography and ancestry—at the molecular level. In addition to the ethical humanism of the state projects, additional pressure to proceed in this direction came in some areas from the demands of patient groups for genomic self-knowledge, and in others from the commercial aspirations of pharmaceutical companies and the biomedical industry for a genomic strategy for diagnosis, drug development and marketing. By 2003 multiple projects are under way to map diversity at the level of the SNP. Strikingly, Howard University in the USA has generated a database of DNA sequences to be used to exploring the genomic bases of disease among black Americans, and also to trace individuals' 'roots' to their pre-slavery origins in very specific regions of Africa. This contemporary programme to identify biological differences is not undertaken in the name of population purity, but of national economic development, the search for health in biosocial communities, and the growing sense of many individuals that genetics in some way holds the key to their 'identity'.

It would be tempting to say that this highly sophisticated genomics has produced new complexity into the figure of humanity. But, despite the heated debates in the medical literature, the core racial typology of the nineteenth century—white (Caucasian), black (African), yellow (Asian), red (Native American)—still provides a dominant mould through which this new genetic knowledge of human difference is taking shape and entering medical and lay conceptions of human variation. Medical researchers and gene mappers specify their populations and their samples in such terms, drug companies seek to target specific pharmaceuticals to groups designated, for example, as 'African Americans', and individuals seek to trace their 'African' roots through matching the patterns of their SNPs with those from villages pillaged by the slave trade in Niger or Cameroon. It is undoubtedly the case that SNP mapping will produce typologies of difference between 'population groups' and almost inevitable that these population groups, in the name of health, will be coded in terms of broad cultural conceptions of race. New challenges for critical thinking are raised by the contemporary interplay between political and genomic classifications of race, identity politics, racism, health inequities, and their potential entry into biomedical truth, commercial logics and the routine practices of health care. We do not think it helpful to assert in advance that such endeavours are based upon faulty premises, let alone to suggest that they are implicitly racist and will exacerbate discrimination. Contemporary genomics is

principally directed at illness conditions rather than gross characteristics such as intelligence or personality. It understands most of those conditions as arising out of interactions between multiple coding regions, where gene expression can be activated and inactivated by many environmental factors at levels ranging from the cellular to the familial, the social and the environmental. It seeks not to pronounce on destiny per se, but rather to render the future as probabilistic and to open it to hope and to technical intervention. It would be unhelpful and misleading to regard this configuration as a replay of the past, or to submerge it within some imagined global logic of biopower: instead we need to identify the points where critical judgement, diagnosing new possibilities and dangers, might play a part in the direction it takes.

Reproduction

For Foucault, sexuality was crucial, in part, because was the hinge that linked an anatamopolitics of the human body with a biopolitics of the population. But today, perhaps for as long as the last 50 years, these issues have become decoupled. Sexuality has been disengaged, to a degree, from the symbolics and practices of reproduction, and reproduction itself has become the object of a series of forms of knowledge, technologies and political strategies that have little to do with sexuality. From about the 1970s one can see a triple movement. The question of reproduction gets problematized, both nationally and supra-nationally, because of its economic, ecological and political consequences—over-population, limits to growth, etc. A new politics of abortion emerges, taking different forms in different national contexts. And, in the West at least, a related issue of ‘reproductive choice’ begins to take shape, when a small number of couples in the West, in alliance with some doctors, strove to define infertility as a potentially remediable medical condition and, consequently, the site of legitimate interventions. All of these sites jointly, yet differently, combined in making reproduction a problem space, in which an array of connections appear between the individual and the collective, the technological and the political, the legal and the ethical. This is a biopolitical space par excellence.

The new reproductive technologies involving the micro-manipulation of eggs and sperm, and pre-implantation genetic diagnosis and selection, although they have attracted the most attention in the Anglo-American world, have actually been rather restricted in their impact on national populations, let alone on global population politics. Though they have been the site of a discursive explosion, the focus of regulatory attention and political and ethical controversy in many Western countries, it is hard to discern some unified biopolitical strategy underlying these developments. The rhetoric of choice clearly resonates with the ethic of autonomy at the heart of advanced liberal modes of subjectification, and the transformation of infertility into a treatable illness exemplifies the re-imagining of human capacities as open to re-engineering and enhancement by medicine. However, we need to recognize the limited scope of these procedures, and the fact that they are far from routine, and often unsuccessful. Biopolitically, reproductive choice in the form of embryo selection, far from being in the service of general racial improvement or even individualized ‘designer babies’, has been almost entirely limited to the identification of foetuses with major malformations or crippling and terminal genetic disorders (Franklin, 1997, forthcoming 2006; Throsby, 2004). Even then, the use of diagnostic techniques has not inevitably led to termination but often

to providing anticipatory information in the services of the kinds of life planning that have become intrinsic to forms of life in contemporary liberal societies. Perhaps, as many feminists have argued, the principal biopolitical achievement here lies on the axis of subjectification: these strategies exhibit the characteristic formation in which apparent choices entail new forms of ‘responsibilization’ and impose onerous obligations, especially, in this case, upon women.

Less attention in the Western academy has been paid to the ‘molar’ pole of the management of reproduction—the campaigns for population limitation that have spread across the Indian subcontinent, China and South East Asia and many Latin American countries. These biopolitical strategies are undoubtedly underpinned by truth claims, although they are those of demography and economics, not of heredity and eugenics. Take, for example, the publication, in 1972, of the report from the Club of Rome entitled *Limits to growth*. Using a model derived from system dynamics for its analysis, the report concluded that:

If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity. (Meadows *et al.*, 1972: <http://www.clubofrome.org/docs/limits.rtf>)

Fundamental to their prescription to avert this problem was birth control to stabilize population, by limiting family size to two children, especially in those countries where it currently greatly exceeded that, but even this path was no guarantee of success.

We end on a note of urgency. We have repeatedly emphasized the importance of natural delays in the population-capital system of the world. These delays mean, for example, that if Mexico’s birth rate gradually declined from its present value to an exact replacement value by the year 2000, the country’s population would grow from 50 million to 130 million. We cannot say with certainty how much longer mankind can postpone initiating deliberate control of its growth before it will have lost the chance for control. (Meadows *et al.*, 1972: <http://www.clubofrome.org/docs/limits.rtf>)

These dire warnings resonated with a raft of analogous concerns about the impact of population growth on economic wealth and the need for governments—especially those of less developed states—to introduce policies to curtail reproduction—especially among the poor—as a prerequisite to modernization. These varied from the coercive—China’s One Child Policy or the sterilization campaigns in India are the two best-known examples—to those which gradually came to adopt principles of informed consent to what was euphemistically termed ‘voluntary surgical contraception’—for example, in Mexico. They were based upon demographic data and algorithms linking population growth to economic performance developed by geographers and mathematicians, embedded in educational programmes for development workers and others, proselytized by numerous private pressure groups and policy advisory bodies, and built into the policies of development agencies such as the ‘Office of Populations’ of the ‘Bureau for Global Programs’ of the United States Agency for International Development (USAID). The ‘population time bomb’ became part of the common sense of public opinion in the West, and a major justification for aid from

advanced industrial societies to poorer countries was that this would enable them to limit their population and hence the danger that their population growth posed.

By the end of the 1980s, policies for the limitation of procreation among the poor stressed the importance of voluntary assent and informed choice, and argued that the aim was to prevent the misery of maternal deaths and perinatal mortality in the Third World. Voluntary female sterilization is the most prevalent contraceptive method today, used by over 138 million married women of reproductive age compared to 95 million in 1984 (Robey *et al.*, 1992). There is particular controversy over the increasing use of the quinacrine pellet method developed by Dr Jaime Zipper in 1984, distributed to 19 countries around the world, including Bangladesh, Chile, China, Colombia, Costa Rica, Croatia, Egypt, India, Indonesia, Iran, Malaysia, Morocco, Pakistan, Philippines, Romania, the United States, Venezuela and Vietnam, but subject to later banning in some countries. The use of quinacrine, often surreptitiously, through direct relations between NGOs and individual doctors, often aimed at particular segments of the population considered problematic or undesirable, leads critics to conclude that these repeat Nazi non-surgical sterilization practices, and are contemporary successors to the sterilization and population limitation campaigns of the 1970s and 1980s, despite their rhetoric of informed choice: they amount to global eugenics.¹²

From the perspective of biopower, however repugnant these policies, it is misleading to make that criticism through a rhetorical association of them with the eugenics of the mid twentieth century. If we use the term eugenics to apply to any intervention on the reproduction, morbidity and mortality of the population, it covers everything from contraception through abortion to public health, and its use becomes merely part of a general critical rhetoric. Eugenics—the improvement of the biological stock of the population—did indeed take both negative and positive forms, but in each case, it was directed to maximizing racial fitness in the service of a biological struggle between nation states. The forms of biological knowledge that inform our ways of governing others and ourselves are no longer those of the survival of the fittest. Limiting population in the interests of national economic prosperity does not operate according to the biopolitical diagram of eugenics, and is not the same as purification of the race by elimination of degenerates.

This is not to say that there are no forms of eugenics around. One visible form is linked to public health. In Cyprus, there are systematic programmes of nationwide testing, with the assent of the population, the church and the state, to identify and eliminate cystic fibrosis—not by embryo selection but by marriage counselling.¹³ We can see something of the same strategy at work in practices for the control of Tay Sachs among Ashkenazi Jews in North America and in Israel—practices that have been developed by authorities arising from within those ‘biosocial communities’ themselves.¹⁴ By any definition, this is a strategy aimed at reducing the levels of inherited morbidity and pathology in a population considered as a whole by acting on the individual reproductive choices of each citizen, through various forms of authoritative calculation and guidance, sanctioned by a range of religious and secular authorities, including bioethicists, and approved of by the population. If, as we suggest,

12 For examples of the debate, see <http://www.hsph.harvard.edu/Organizations/healthnet/contra/topic05.html#2>

13 This is the subject of ongoing research by Stefan Beck.

14 Discussed in the paper by Barbara Prainsack in *BioSocieties*, 1(1). See also Rose (2006: ch. 6).

this is a type case of contemporary biopolitics, it would clearly be misleading to diagnose it as a form of genocide, or the re-awakening of the spectre of the camp. Political violence between ethnic groups is certainly endemic in the two countries that we have cited, but that violence turns on a different, non-biopolitical register.

These examples, and others that we could cite, lead us to argue that the economy of contemporary biopolitics operates according to logics of vitality, not mortality: while it has its circuits of exclusion, *letting die* is not *making die*. With the development of ever more sophisticated, cheaper and readily available forms of genetic testing, biopolitics at both poles—the molar and the molecular—might well be changing. As endless conferences and books have argued, there is all the difference in the world between using genetic techniques to diagnose and even select against embryos with Down syndrome or foetal tube syndrome, and seeking to use those techniques to diagnose intelligence and eliminate the ‘feeble minded’. It is not clear what configurations will take shape if current research succeeds in identifying genetic markers for susceptibilities to common complex disorders such as stroke or heart disease, or for risks of depression or schizophrenia. Our own current research pays close attention to this work, the scientific and technological techniques directed at these ends. But there is no evidence to suggest that the forms of biopolitics that are taking shape around these have, as their strategic objectives, wholesale management of population qualities. Their logic is different, and notably involves attempts to develop and maximize targets for pharmaceutical markets and other health care interventions which entail enrolling individuals, patient groups, doctors and political actors in campaigns of disease awareness and treatment in the name of the maximization of quality of life. This is capitalism and liberalism, not eugenics, by either the front or back door, at least insofar as eugenics has acquired an inescapably negative meaning in our contemporary culture. We still need to develop the conceptual tools for the critical analysis of the ways in which biopolitics plays out in relation to biocapital and bioeconomics, in circuits in which health and vitality become key stakes in market relations and shareholder value.

The possibilities of genomic management of the population—designer babies, engineered futures, the ‘sorting society’ and the like—have a powerful symbolic presence in contemporary biopolitics, especially in those polities where twentieth-century eugenics took its most corrosive form. However large-scale genetic management of the population has not taken place and, indeed, it is currently technically impossible. More significantly, with the exception of some minor sects, there are few forces that embrace such a rationality. Nonetheless, currently feasible practices such as sex selection do seem to be having molar consequences outside Europe, even though this is the product of individual choices aimed at personal aspirations and shaped by specific socio-cultural contexts, and is often explicitly discouraged by official policies. Over and above these alterations in the gross characteristics of the population, in which genetic technologies merely amplify existing cultural forms, we think that it is extremely unlikely that the micro-management of population characteristics through intervention at the point of reproduction will be scientifically and technically feasible. Even if it is feasible in relation to certain specific conditions, as we see in relation to sickle cell or Tay Sachs, the forms and extent of such genomic management will be shaped by the concerns of particular biosocial communities, rather than by a State commitment to the engineering of population quality for national

ends. We will neither repeat the past, nor enter the utopias or dystopias of futurology: to understand and intervene in possible futures we need an analytic which is more modest and empirical, attuned to all the small mutations where today is becoming different from yesterday.

Genomic medicine

The first biopolitical strategies, in the eighteenth century, concerned the management of illness and health. These provided a model for many other problematizations operating in terms of the division of the normal and the pathological. They have a peculiar saliency in liberal societies because they establish links between the molecular and the molar, linking the aspiration of the individual to be cured to the management of the health status of the population as a whole. The poles of this biopolitical field extend from the management of collective health by means of pure water, through annual health check-ups, health insurance, preventive medicine that operates in large domains between collectivities and individuals, to the field of clinical interventions on the body of the sick person in the name of health. Despite the contemporary focus on the individuated body, action on the collective pole has been the main motor of increases in longevity and quality of life. Variations in the rationalities and technologies directed to this collective pole are the key factors that have led to the scandalous variations in life expectancy and life chances that we can observe today around the globe. In the vast majority of these instances, the causes and the remedies are known, and require no further scientific advance or technological innovation, but only political will. Even in apparently novel disorders, such as SARS, whose outbreak rapidly called forth the whole panoply of modern biological medicine including the rapid identification and sequencing of the pathogen, the preventive modes of intervention required were archaic. They were basically those of quarantine, first applied to epidemic outbreaks such as plague, that have been deployed at least since medieval times and have merely been updated to take account of contemporary mechanisms of mobility and communication. These strategies proved highly effective without any significant contribution from genomic medicine.

What then of genomic medicine? It will have become clear that a judgement as to whether or not a new regime of biopower will take shape—that is to say, will form a qualitative new configuration of knowledge, power and subjectivity—depends on many factors. Some of these depend upon the uncertain outcome of genomic research itself, but many others depend on contingencies external to genomics and biomedicine. As we write, it is still not clear whether the new forms of molecular and genomic knowledge are actually capable of generating the kinds of diagnostic and therapeutic tools that its advocates hope for.¹⁵ The stakes here are high, economically, medically and ethically. They lie in the presumed capacity of genomics to form a new ‘know how’ that will enable medicine to transform its basic logic from one based upon restoring the organic normativity lost in illness to one engaged in the *molecular re-engineering of life itself*. Genomics promises to identify the key processes that control the manufacture of proteins and, in doing so, open these to precise intervention in order to produce therapeutic effect. The political economy of these knowledges is, as

15 This paper was originally written in August 2003.

Carlos Novas has pointed out, one of hope: the hope of individuals, campaigners, scientists, health care systems, science policy advisers and the pharmaceutical companies that a new kind of 'know how' of life itself will emerge that will generate cures, along with their attendant biovalue (Novas and Rose, 2000). For its advocates, the genomic identification of functional pathology must inevitably open a path towards molecular intervention. But to the degree that this logic proves impossible to realize, genomics will remain only one dimension of health care and biological understanding; one that gains its intelligibility within a wider field of knowledge on the aetiology, prognosis and treatment of disease.

How, then, might we begin to think through the implications of the nascent advances in molecular and genomic technologies? The belief that something significant is at stake here mobilizes the strategies and tactics of a whole variety of forces whose characteristics have been documented in detail in numerous empirical studies. National governments invest in genomics, set up bio-banks, and fund research into basic and applied genomic medicine. Pharmaceutical and biotech companies invest billions and employ tens of thousands of talented scientists and technicians in subtle and elegant experiments and inventions. Patient groups invest hope, political capital, their own tissue samples and money in the search for genetic treatments. Pressure groups lobby for and against some or all of these developments on the basis of their own ethical or biopolitical concerns. So clearly a modified biopolitical rationality in relation to health is taking shape, in which knowledge, power and subjectivity are entering into new configurations, some visible, some potential. This formation involves many elements that have played their part in previous apparatuses, and many that took more or less their current shape after the Second World War: patient groups are not new, pharmaceutical companies pre-existed genomics, and governments have invested increasingly large sums in promoting and regulating basic and applied medical research in the name of population health, economic development and international competitiveness. But, alongside these previous configurations, which have by no means disappeared, we believe that something new is taking shape, something that is beginning to colonize and mutate the major apparatuses for the management of the health of each and of all, at least in the industrial democratic world.

Let us take two small examples of these new investments. Rabinow's research in 2003 was an anthropological investigation of Celera Diagnostics, in Alameda California.¹⁶ This company is an offshoot of Celera Genomics, the company that accelerated the race to map the human genome (and other non-human genomes as well). With several hundred million dollars at its disposal, it identified roughly a dozen major disease areas and adopted an approach that seeks to identify clusters of SNPs (single nucleotide polymorphisms) in functional areas of the genome. Hence Celera Diagnostics combines massive, expensive machine capacity, diverse alliances with multiple disease associations and university researchers, and a strategy that this will enable the diagnostic identification of predispositions to complex disease involving variations in numerous genes. Their model for polygenetic conditions moves beyond the search for the 'gene for' model of the 1990s, a model that is obviously inadequate for understanding the most common disorders such as cancer, heart disease and other complex disorders, and probably also inadequate for understanding the genomics of most diseases and susceptibilities. The goal is to produce diagnostic tests that would be

16 Since writing this paper, this research has been published as Rabinow and Dan-Cohen (2004, 2006).

used massively in reference laboratories in a routine fashion, to enable pre-symptomatic diagnosis and preventive interventions on a previously unimaginable scale within the next five years.

If this model were to succeed, and to be deployed widely, not only in the developed but also in the less developed world, the logics of medicine, and the shape of the biopolitical field, would be altered, and new contestations would emerge over access to such technologies and the resources necessary to follow through their implications. Further, as the forms of knowledge generated here are those of probability, new ways of calculating risk, understanding the self and organizing health care would undoubtedly emerge. It is still not known if this model will prove operable. If it does, while it is clear that the shape of the biopolitical field would mutate, there is no technological determinism here: multiple responses are possible. And if we remember, as we always should, that, even in the world's most prosperous nation, millions are still denied access to the basic health technologies and medical interventions that have been established for half a century, the political and social implications are evidently shaped more by the political side of the biopolitical than the medical side. If success is partial and patchy, if hopes are deflated, if venture capital and stock market investments move elsewhere, this still does not mean that nothing will emerge. Rather it means simply that, as with so many previous medical advances, the mutations that will take place in therapeutics will be smaller, more dispersed and their effects harder to see in the short term, though perhaps evident from the perspective of the future.

In a related but distinct area of the field, Rose's research in 2003 focused on the development known as pharmacogenomics, and in particular on its engagement with mental disorders. The research site here was the take-up, principally in Europe, of the new generation of anti-depressant medication, in the context of a belief, underscored by the World Health Organization and accepted by international health management agencies, that by 2020 depression will become the second largest cause of morbidity in both the developed and less developed world, second only to ischaemic heart disease. There are clearly many factors that have led to this belief, which cannot be addressed here in any detail. They include the humanistic belief of doctors and others that much misery is the result of an under-diagnosed clinical condition for which safe and effective drug treatments are now available, the concern of national governments about the cost to their budgets of days lost through depression, the significance of the key indicator of suicide rates in international health comparisons, and the intensive marketing and 'disease awareness' campaigns of the pharmaceutical companies.

What is the link between this and genomics? First, the new (third) generation of anti-depressants claim to be fabricated at a molecular level to target the precise neuronal mechanisms that underlie depressive symptoms. Second, because there are over a dozen of these drugs on the market, there are no clear symptomatic or other markers to enable doctors to choose between them, and yet the different drugs are variable in their effects, some having beneficial effects with some individuals, while having no therapeutic effects in others and generating adverse effects in a third group. Third, some argue that genetic testing may enable medics to choose the right drug at the right dose for the right individual, thus maximizing both therapeutic benefit and compliance, minimizing adverse effects, increasing the efficiency of the targeting of health care resources, and hence acting not just at the individual level but also upon key financial and population health indicators. If successful, driven

by the wish of all concerned, including patients, to have effective drugs that have minimal side effects, genetic testing may migrate from the genetic counsellor's office to the general practitioner, and become as routine as blood tests, opening up the population as a whole to a genetic understanding of their health, illness and predispositions. If only partially successful, the routinization of genetic testing prior to treatment decisions may be slow, patchy and limited, but the genetic rewriting of mental illness will nonetheless once more enter the field of truth, not in the name of population purification and the elimination of degeneracy, but in the name of quality of life, even happiness. In each case, the potential is there for a reshaping of the biopolitics of mental health, not only rewriting its epistemology along biological lines, but also reconfiguring the relations of knowledge, power and expertise which govern it, perhaps engendering new strategies for minimizing mental disorder at the individual and collective level, and reshaping the ways in which individuals themselves think about, judge and act upon themselves in the name of mental health.

Conclusion

One might well imagine what it might have been like in 1800 for an analyst attempting to grasp the transformative implications of the forerunners of the 'birth of the clinic'. Today we may well be in an analogous situation, where the drivers of change can be discerned, some mutations can already be detected, some consequences predicted, but where the overall directions remain obscure and their implications still in doubt. Thus it is no surprise that it is hard to tell whether we are at the early stages of a momentous shift, in the middle of a process that is well under way towards stabilizing new forms, or in a conjuncture that will prove to be a dead end or at least marginal to other changes that we cannot envisage today. But in attempting to make a diagnosis from 'in the middle', we think that the concept of biopower focuses our attention on three key elements that are at stake in any transformation—knowledge of vital life processes, power relations that take humans as living beings as their object, and the modes of subjectification through which subjects work on themselves qua living beings—as well as their multiple combinations.

In the new political economy of vitality, transnational flows of knowledge, cells, tissues and intellectual property are coupled with local intensifications and regulated by supranational institutions. Mobilizations of persons, tissues, organs, pathogens and therapeutics operate at different speeds and encounter local obstacles and incitements. Individualizing and collectivizing subjectifications are also mobile and transnational: cystic fibrosis groups cut across national and class barriers as do their care givers; models of patient activism spread, and are taken up and reinterpreted from Bangladesh to Toronto. Who, in 1955, could have imagined depressed people as a global category, not only as targets but also as active subjects in a new biopolitics of mental health? If we are in an emergent moment of vital politics, celebration or denunciation are insufficient as analytical approaches. The concept of biopower, used in a precise fashion, related to empirical investigations and subject to inventive development, would surely take its place as a key part in an analytical toolkit adequate to the diagnosis of what Gilles Deleuze has termed 'the near future' (1989).

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