

Introduction

At the close of the twentieth century, many predicted that “we” were entering a “biotech century,” an age of marvelous yet troubling new medical possibilities.¹ Some believed that the sequencing of the human genome would inaugurate an age of genetic manipulation with marvelous, perhaps terrifying consequences. Linking genomics with developments in reproductive technology, such as pre-implantation genetic diagnosis and cloning, they imagined a world of engineered people, with qualities and capacities fabricated on demand. Others believed that a new generation of psychopharmaceuticals would soon enable us to design our moods, emotions, desires and intelligence at will. Still others dreamed of the conquest of mortality, and a world in which humans had extended their lifespan indefinitely. Many of the biomedical techniques that were cited were already familiar: genetic screening, reproductive technologies, organ transplants, genetic modification of organisms, and the new generation of psychiatric drugs whose usual exemplar is Prozac. Others were said to be “just around the corner”: genetic engineering, xenotransplantation, personalized medicine tailored to each individual’s genotype as coded on a tiny chip, and the fabrication or regeneration of organs *in vitro* or using stem cells that could be differentiated into any kind of tissue.

These prospects have generated hopes and fears, expectation and trepidation, celebration and condemnation. While some invest great hope in the prospects of novel and effective cures for all sorts of diseases and afflictions, others warn of the dangers of treating human life as infinitely malleable, especially where the creation and use of human embryos in fertility treatment or research is concerned. Many politicians, universities, corporations, and private investors hope these biomedical advances will

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generate valuable intellectual property and drive a new and highly lucrative bioeconomy, but others believe that basic science is being suborned in the service of profit and that less glamorous factors affecting the health and illness of the majority are neglected in the search for therapies for the few that will advance careers and generate profits. Pharmaceutical companies have been singled out for particular criticism, accused of selling many new drugs at inflated prices and with false promises, ignoring potentially dangerous side effects, and medicalizing nondisease conditions such as baldness or lack of libido to create new markets in the ruthless pursuit of shareholder value. In many countries, biomedical developments that involve genetics have been particularly controversial, raising the specter of genetic discrimination and eugenics, notably where embryo selection is contemplated to avert hereditary conditions, but also in research that might identify the genetic bases of diseases, and even in pharmacogenomics that seeks the genetic variations giving rise to individual differences in pharmaceutical responses.

Politicians, regulators, theologians, philosophers, and others have been entangled in these debates. Governments have enacted laws to limit some of these developments, especially those relating to genetic selection in human reproduction. Many have set up committees and commissions to address the seemingly inescapable demand such possibilities seem to have engendered—that “a line must be drawn” between the permitted, the regulated, and the forbidden. Certain pressure groups campaign for restrictions to be overthrown to allow the research that might bring hope to their loved ones. Others campaign for restrictions to be tightened, in particular to protect the “sanctity of life” of the ovum from fertilization or even before. Some hope to settle these debates by appeal to a transcendental religious morality or an equally transcendental human ontology. For others, the issues are social, consequential, and situational—What kinds of societies do we want? What kinds of consequences might these developments have? Who should have the power to make decisions in each of the troubling situations where a choice has to be made about the selection of an embryo, the conduct of an experiment, the licensing of a drug, the termination of a life? A whole profession of bioethics—and a developing field of “neuroethics”—has sprung into existence to arbitrate these issues. Some suggest that we are entering a posthuman future, a prospect greeted by some “transhumanists” with rather poignant yearning, and by others with distress and consternation. Many intellectuals have been drawn into this debate: Francis Fukuyama, Leon Kass, and Jürgen Habermas are but the best known of those who have sought to establish normative limits, arguing that, however we might regard them in relation to nonhuman living organisms, such interventions on human beings are violations of our human nature—for them, human dignity, identity, and perhaps the

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fate of humanism itself depend upon the inviolability of human nature itself. We tamper with our “nature” at enormous risk, a risk, ultimately, to the human soul (Fukuyama 2002, Habermas 2003, Kass 2002, President’s Council on Bioethics (U.S.) and Kass 2003).

This book is neither a set of speculations about the future nor a bioethical meditation on the present. Indeed such speculations and meditations are part of what I try to analyze. They themselves—their visions of the future, their fears and hopes, their evaluations and judgments—are elements in an emergent form of life.² The politics of this form of life, this “vital politics,” is the focus of this book. Of course, politics has long been concerned with the vital lives of those who are governed. At the risk of simplification, one could say that the vital politics of the eighteenth and nineteenth centuries was a politics of health—of rates of birth and death, of diseases and epidemics, of the policing of water, sewage, foodstuffs, graveyards, and of the vitality of those agglomerated in towns and cities. Across the first half of the twentieth century this concern with the health of the population and its quality became infused with a particular understanding of the inheritance of a biological constitution and the consequences of differential reproduction of different subpopulations; this seemed to oblige politicians in so many countries to try to manage the quality of the population, often coercively and sometimes murderously, in the name of the future of the race. But the vital politics of our own century looks rather different. It is neither delimited by the poles of illness and health, nor focused on eliminating pathology to protect the destiny of the nation. Rather, it is concerned with our growing capacities to control, manage, engineer, reshape, and modulate the very vital capacities of human beings as living creatures. It is, I suggest, a politics of “life itself.”³

While many of the themes in this contemporary politics of life are familiar, others are novel. Some of this novelty lies in more general shifts in rationalities and technologies of government, notably the transformations in the provision of security, welfare, and health associated with challenges to the social state in Europe and Australasia, and the rise of new “advanced liberal” governmental technologies (Barry et al. 1996, Rose 1989, 1996a, Rose and Miller 1992). In particular, these have involved a reorganization of the powers of the state, with the devolution of many responsibilities for the management of human health and reproduction that, across the twentieth century, had been the responsibility of the formal apparatus of government: devolving these to quasi-autonomous regulatory bodies—bioethics commissions, for example; to private corporations—like private fertility clinics and biotechnology companies selling products such as genetic tests directly to consumers; and to professional groups—such as medical associations—regulated “at a distance” by the

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powerful mechanisms of audits, standards, benchmarks, and budgets. These modifications in rationalities and technologies of government have also involved an increasing emphasis on the responsibility of individuals to manage their own affairs, to secure their own security with a prudential eye on the future. Nowhere have these been more telling than in the field of health, where patients are increasingly urged to become active and responsible consumers of medical services and products ranging from pharmaceuticals to reproductive technologies and genetic tests (Rose 1992, 1999). This complex of marketization, autonomization, and responsibilization gives a particular character to the contemporary politics of life in advanced liberal democracies.

Over and above these shifts, perhaps, the novelty of contemporary bio-politics arises from the perception that we have experienced a “step-change,” a qualitative increase in our capacities to engineer our vitality, our development, our metabolism, our organs, and our brains. This step-change entails a change in scale. The biomedical knowledges and techniques that are currently taking shape have many differences, but they do have one thing in common. It is now at the molecular level that human life is understood, at the molecular level that its processes can be anatomized, and at the molecular level that life can now be engineered. At this level, it seems, there is nothing mystical or incomprehensible about our vitality—anything and everything appears, in principle, to be intelligible, and hence to be open to calculated interventions in the service of our desires about the kinds of people we want ourselves and our children to be. Hence the contestations that are taking place around each of these issues, from stem cells to smart drugs, are themselves shaped, in part, by the opportunities and threats that such a molecular vision of life seems to open up. As human beings come to experience themselves in new ways as biological creatures, as biological selves, their vital existence becomes a focus of government, the target of novel forms of authority and expertise, a highly cathected field for knowledge, an expanding territory for bioeconomic exploitation, an organizing principle of ethics, and the stake in a molecular vital politics.

A Cartography of the Present

To analyze the present, and the potential futures it may prefigure, is always a risky exercise. In analyzing contemporary vital politics, I do not think we can proceed simply by applying the now familiar tropes of genealogy and “histories of the present.” Such genealogies seek to destabilize a present that has forgotten its contingency, a moment that, thinking itself timeless, has forgotten the time-bound questions that gave rise to its be-

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iefs and practices. In making these contingencies thinkable, in tracing the heterogeneous pathways that led to the apparent solidity of the present, in historicizing those aspects of our lives that appear to be outside history, in showing the role of thought in making up our present, such genealogies sought to make that present open to reshaping. But today, to destabilize our present does not seem such a radical move. Popular science, media representations, pundits, and futurologists all portray our own moment in history as one of maximal turbulence, on the cusp of an epochal change, on a verge between the security of a past now fading and the insecurity of a future we can only dimly discern. In the face of this view of our present as a moment when all is in flux, it seems to me that we need to emphasize continuities as much as change, and to attempt a more modest cartography of our present. Such a cartography would not so much seek to destabilize the present by pointing to its contingency, but to destabilize the future by recognizing its openness. That is to say, in demonstrating that no single future is written in our present, it might fortify our abilities, in part through thought itself, to intervene in that present, and so to shape something of the future that we might inhabit.

To undertake such a cartography of the present, a map showing the range of paths not yet taken that may lead to different potential futures, it is important to recognize that we do not stand at some unprecedented moment in the unfolding of a single history. Rather, we live in the middle of multiple histories. As with our own present, our future will emerge from the intersection of a number of contingent pathways that, as they intertwine, might create something new. This, I suspect, will be no radical transformation, no shift into a world “after nature” or a “posthuman future.” Perhaps it will not even constitute an “event.” But I think, in all manner of small ways, most of which will soon be routinized and taken for granted, things will not be quite the same again. This book, then, is a preliminary cartography of an emergent form of life, and a draft of a history of the potential futures it embodies.

Mutations

The space of contemporary biopolitics has not been formed by any single event. The reshaping of medical and political perception and practice has come about through interconnections among changes along a number of dimensions. Without claiming exhaustivity, I delineate five pathways where I think significant mutations are occurring.

First, *molecularization*: The “style of thought” of contemporary biomedicine envisages life at the molecular level, as a set of intelligible vital mechanisms among molecular entities that can be identified, isolated,

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manipulated, mobilized, recombined, in new practices of intervention, which are no longer constrained by the apparent normativity of a natural vital order.

Second, *optimization*. Contemporary technologies of life are no longer constrained, if they ever were, by the poles of health and illness. These poles remain, but in addition, many interventions seek to act in the present in order to secure the best possible future for those who are their subjects. Hence, of course, these technologies embody disputed visions of what, in individual and or collective human life, may indeed be an optimal state.

Third, *subjectification*. We are seeing the emergence of new ideas of what human beings are, what they should do, and what they can hope for. Novel conceptions of “biological citizenship” have taken shape that recode the duties, rights, and expectations of human beings in relation to their sickness, and also to their life itself, reorganize the relations between individuals and their biomedical authorities, and reshape the ways in which human beings relate to themselves as “somatic individuals.” This is linked to the rise of what I term a “somatic ethics”—ethics not in the sense of moral principles, but rather as the values for the conduct of a life—that accords a central place to corporeal, bodily existence.

Fourth, *somatic expertise*. These developments are giving rise to new ways of governing human conduct, and the rise of multiple subprofessions that claim expertise and exercise their diverse powers in the management of particular aspects of our somatic existence—geneticists specializing in particular classes of disorder working in alliance with groups of patients and families, specialists in reproductive medicine with their public or private clinics and devoted clientele, stem cell therapists whose work becomes known across the world via the Internet and who become the focus of pilgrimages of hope for cures for everything from spinal cord injuries to Alzheimer’s disease. Around these experts of the soma cluster a whole variety of new pastoral experts—genetic counselors are perhaps the best exemplars—whose role is to advise and guide, to care and support, individuals and families as they negotiate their way through the personal, medical, and ethical dilemmas that they face. And, perhaps most remarkable has been the rise of a novel expertise of “bioethics” claiming the capacity to evaluate and adjudicate on these activities, which has been enrolled in the government and legitimization of biomedical practices from bench to clinic and marketplace.

Fifth, *economies of vitality*. Energized by the search for biovalue, novel links have formed between truth and capitalization, the demands for shareholder value and the human value invested in the hope for cure and optimality. A new economic space has been delineated—the bioeconomy—and a new form of capital—biocapital. Old actors such as pharma-

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ceutical corporations have been transformed in their relation with science on the one hand and stock markets on the other. New actors such as biotech start-ups and spin-outs have taken shape, often seeking to stress their corporate social responsibility and combining in various ways with the forms of citizenship and expertise. Life itself has been made amenable to these new economic relations, as vitality is decomposed into a series of distinct and discrete objects—that can be isolated, delimited, stored, accumulated, mobilized, and exchanged, accorded a discrete value, traded across time, space, species, contexts, enterprises—in the service of many distinct objectives. In the process, a novel geopolitical field has taken shape, and biopolitics has become inextricably intertwined with bioeconomics.

I am wary of epochal claims, and it is necessary to recognize that none of these mutations marks a fundamental break with the past: each exhibits continuity alongside change. Yet, I suggest, from the point of view of the present, a threshold has been crossed. Something is emerging in the configuration formed by the intertwining of these five lines of mutation, and this “something” is of importance for those, like myself, who try to write the history of possible futures. This is why I suggest that we are inhabiting an emergent form of life.

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In chapter 1 I examine these five mutations in more detail, describe their key characteristics, and set out my own view of their significance. In chapter 2 I focus on the ways in which these mutations are bound up with changing conceptions of life and changing forms of politics, and argue that, in the interrelations between these changes, in which neither politics nor life means quite the same as before, a new politics of life has taken shape. In chapter 3 I focus in particular on the implications of the shift away from biological and genetic determinism and develop my claim that the new world of vital risk and vital susceptibilities, demanding action in the vital present in the name of vital futures to come, is generating an emergent form of life. Each of the subsequent chapters explores one particular facet of the biopolitics of this emergent form of life in depth. In chapter 4 I focus on changing ideas of genetic risk and genetic prudence, describe the entanglements of genomic knowledge and expertise with particular regimes of the self, and examine the emergence of novel forms of genetic responsibility. In chapter 5 I develop these arguments in relation to changes in biological citizenship and examine some of the forms such biological citizenship currently takes. In chapter 6 I consider the implications of the mutations I have identified for transformations in the idea of race and ethnicity in the face of genomic medicine. In chapter 7 I examine

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the rise of new neurochemical conceptions of the self and its pathologies, and the associated rise on novel technologies of the neurochemical self. In chapter 8 I describe the implications of these new developments in molecular biology, neuroscience, behavioral genomics, and psychopharmacology for crime control and the criminal justice system.

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The argument advanced through these chapters does not share the pessimism of most sociological critics, who suggest that we are seeing the rise of a new biological and genetic determinism. Instead I argue that we are seeing the emergence of a novel somatic ethics, imposing obligations yet imbued with hope, oriented to the future yet demanding action in the present. On the one hand, our vitality has been opened up as never before for economic exploitation and the extraction of biovalue, in a new bioeconomics that alters our very conception of ourselves in the same moment that it enables us to intervene upon ourselves in new ways. On the other hand, our somatic, corporeal neurochemical individuality has become opened up to choice, prudence, and responsibility, to experimentation, to contestation, and so to a politics of life itself. I thus conclude the book with a brief afterword, which turns directly to the question of ethics, drawing a distinction between the ethical ruminations of bioethicists and neuroethicists and a different sense of ethics, one that is embodied in the judgments individuals make of their actual and potential choices, decisions, and actions as they negotiate their way through the practices of contemporary biomedicine. I suggest that the apparatus of bioethics has achieved the salience that it has, in contemporary biopolitics, because of the problems of governing biomedicine in an age of choice and self maximization in which the body and its capacities have become central to technologies of selfhood. As Max Weber found an elective affinity between the Protestant ethic and the spirit of early capitalism, generating the forms of life that made foresight, prudence, calculation, and accumulation not just legitimate but potential indicators of salvation (Weber 1930), so there is an elective affinity between contemporary somatic ethics and the spirit of biocapitalism. Somatic ethics, that is to say, accords a particular moral virtue to the search for profit through the management of life. Yet, at the same time, it opens those who are seen to damage health in the name of profit to the most moralistic of condemnations. As biopolitics becomes entangled with bioeconomics, as biocapital becomes open to ethical evaluation, and as ethopolitics becomes central to our way of life, new spaces are emerging for the politics of life in the twenty-first century.