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GLOBAL ASSEMBLAGES, ANTHROPOLOGICAL PROBLEMS

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The diverse phenomena associated with "globalization" pose curious problems for social scientific observers.[1] There is no agreement about whether globalization is happening or what "globalization" means, to say nothing about whether "it" is a good thing. Yet its recurrence in discussions over the past 10–20 years is striking. The term has been an almost unavoidable marker for heterogeneous and often contradictory transformations – in economic organization, social regulation, political governance, and ethical regimes – that are felt to have profound though uncertain, confusing, or contradictory implications for human life.

The issue cuts to the heart of the modern disciplines. Increasingly, the phenomena that concern social scientists assume spatial forms that are nonisomorphic with standard units of analysis. Various localisms and regionalisms along with "transnational" patterns have been the subject of growing interest. More fundamentally, many observers have argued that we are witnessing a shift in the core dynamics of social, cultural, and economic life.

A range of analytic responses to this situation can be identified. One has been a turn to more or less grand statements about a new order of things or shifting macroprocesses: from modernization to globalization, for instance, or the emergence of global cities, or a network society.[2] A second has examined "localities," however defined, as articulations with, effects of, or dynamic responses and resistances to, global forces.[3] A third has sought to reconstitute the categories of the social sciences in new forms. One thinks, for example, of "global culture," or the more specified concept of technological, cultural, or media "scapes."[4]

All these trajectories of research have been and will continue to be productive. The approach presented in this volume overlaps with them in important ways, but its

point of entry, core problems, and mode of analysis are distinct. It does not examine the changes associated with globalization in terms of broad structural transformations or new configurations of society or culture. Rather, it examines a specific range of phenomena that articulate such shifts: technoscience, circuits of licit and illicit exchange, systems of administration or governance, and regimes of ethics or values. These phenomena are distinguished by a particular quality we refer to as *global*. They are abstractable, mobile, and dynamic, moving across and reconstituting "society," "culture," and "economy," those classic social scientific abstractions that, as a range of observers have recently noted, today seem over-vague and under question.[5]

As global forms are articulated in specific situations – or territorialized in *assemblages* – they define new material, collective, and discursive relationships.[6] These "global assemblages" are sites for the formation and reformation of what we will call, following Paul Rabinow, *anthropological problems*. They are domains in which the forms and values of individual and collective existence are problematized or at stake, in the sense that they are subject to technological, political, and ethical reflection and intervention.

The chapters in this volume examine a diversity of such global assemblages, from neoliberal reform of the public sector in Russia and Brazil, to bioscience and pharmaceuticals in Africa and Argentina, to the trade in human organs in Moldova, Israel, and India, to accounting and finance in Tokyo, Chicago, and the Middle East. The contributors enter these politically or morally charged domains through a mode of inquiry that remains close to practices, whether through ethnography or careful technical analysis. The result is a discerning, reflective, and critical approach that we feel is defining an important and exciting trajectory of interdisciplinary inquiry in the human sciences.

Before moving to a more systematic discussion, it will be helpful to illustrate this distinctive approach to anthropological problems through an example. In the chapter that begins part II on "Bioscience and Biological Life," Sara Franklin examines stem cell research as one element of what she calls "the global biological."[7] What here is 'global,' exactly? The apparatus of scientific research and technoscientific production associated with stem cells is organized in a transnational, if not exactly global, space. This apparatus is linked to what is generally called 'global' capital, though its flows are socially, institutionally, and technologically concentrated in important ways.

But stem cell research has a 'global' quality in another sense. In principle, its significance is not delimited by social, cultural, or economic determinations. *Potentially*, stem cell research could be organized in any social context, and findings based on this research would be valid anywhere. *Potentially*, it bears on biological life – every human (and, presumably, nonhuman) being on the planet – and can transform how we understand, intervene in, and, indeed, live human life *qua* biological life.

Franklin's analytic strategy, however, is not to examine stem cells as an ideal-typic 'global' form that is freed of context. Rather, she examines the ensembles of

heterogeneous elements – the assemblages – through which stem cell research and its significance are articulated.[8] Thus, the actual scope of stem cell research is determined by a specific distribution of scientific expertise and global capital, which are necessary infrastructural conditions for its spread. Also crucial are regimes of 'ethical' regulation instituted through the political system in various countries. The United Kingdom, Franklin notes, has emerged as an important center of stem cell research thanks to a relatively lenient regulatory regime. The United States, meanwhile, has been pushed to the periphery by limitations on the extraction of stem cells. Notably, the ethical principles in the name of which U.S. restrictions on stem cell research are justified also have a 'global' quality. They invoke a form of humanism that claims to be concerned not with a culture or a particular social group but with human life as such. Yet, like stem cell research itself, this humanism is not all encompassing in its actual scope, and can only be made effective through specific political and technical arrangements.

Franklin's case is also exemplary in its cautious assessment of the 'anthropological' significance of stem cell research. Stem cell research has occupied a space of rancorous moral discord, rife with proclamations of salvation or apocalypse. But it is unlikely, Franklin holds, to usher in a future of biological control or to create a seamless space of technoscience that embraces all of humanity in a virtuous effort to foster life – or, for that matter, in a diabolical effort to technify it – any time soon. And yet, the process of stem cell research is associated with significant changes that deserve careful observation. "If we are not yet in the age of 'biological control,'" Franklin writes, progress in stem cell research means that life "is nonetheless substantially altered."[9] For example, stem cell research may force revision of long-held assumptions concerning the nonreversibility of the aging process of cells and, consequently, of biological organisms. As therapeutics are developed, they will pose problems of political regulation and of ethical reflection and practice for individuals and collectivities.

In this chapter, we develop the various concepts we have introduced. First, we explore what we mean by 'anthropological problems' and examine how the chapters in this volume understand a structure of reflection – involving practical and transformative work – to be central to such problems today. Second, we introduce the 'global assemblage'. Third, and finally, we examine how globalization might be conceived not as a process of secular transformation *per se* but as a problem-space in which contemporary anthropological questions are framed. In presenting these orientations, we also develop the themes around which we have grouped the chapters in the volume: biological life; social technologies and governmentality; reflexivity and calculative action; ethics and values; health and security.

These loose-knit conceptual orientations – along with those presented in the other two chapters in this introductory part, by Stephen Collier and Andrew Lakoff and by Paul Rabinow – do not suggest an overarching theoretical approach. Rather, they

suggest a few among many possible orientations to the wealth of exemplars and concepts presented in the chapters that follow.

Anthropological Problems

In defining the theme of this volume as concerned with anthropological problems, we refer to an interest in the constitution of the social and biological existence of human beings as an object of knowledge, technical intervention, politics, and ethical discussion.

As a range of thinkers, including Hannah Arendt, Michel Foucault, and Karl Polanyi, have shown, this understanding of 'anthropological' problems is specific to a limited range of historical situations.[10] In *The Order of Things*, Foucault showed how biological and social life emerged as that order of existence through which human beings were made objects of systematic investigation in what he called the human sciences.[11] In these fields, a series of questions about "the human" that had previously been addressed in philosophical or theological discussions were posed in domains of secular inquiry. Thus, Foucault argued, the 'modern *cogito*' is not the Cartesian "I" that identified her- or himself as the subject and object of a knowledge that was guaranteed through the circuit of a third term: the 'infinite,' God. Rather, the human sciences understand human beings through the 'finitudes' of an individual history and conditions of collective existence.[12] The modern *cogito* concerns work, sickness and health, material conditions, social interaction, and biological being rather than isolated reflection or spiritual life; problems that are 'anthropological' rather than theological or philosophical.

Foucault called the new figure that emerged as the object of these human sciences "modern man." Following Rabinow's usage in Chapter 3, it is preferable to refer to this figure as *anthropos*. *Anthropos* suggests the specific formation of the human sciences: anthropologies, *logoi*, of humans as biological and social beings. It also suggests an analytic orientation to the malleability, specificity, and historicity of the forms of life constituted through these finitudes.

Hannah Arendt made a related argument in *The Human Condition* concerning the *oikos*, referring to collective rather than individual existence.[13] Arendt pointed out that, for the Greeks, questions of collective existence that bore on the biological and social needs of human beings were confined to the household. Such questions were distinct from the concerns of political life. In the modern polity, by contrast, these biological and communal problems were released from the household to displace or interact with an older juridical understanding of political order. In *The Great Transformation*, Karl Polanyi traced this shift through the thought of British liberalism, for which "[t]he biological nature of man appeared as the given foundation of a society that was not of a political order." "Economic society," he noted, "emerged as distinct from the political state."[14] This "society" took the form of a new kind of collective existence – what Arendt called the "national *oikos*."

Many of the chapters in this volume examine forms of biological or social life that are beyond the horizon of what these thinkers could have imagined. For instance, the institutions of the welfare state as we know them today were only just taking form when *The Human Condition* and *The Great Transformation* were written. The anthropological problems associated with the neoliberal attempt to reform and rationalize social welfarism – a problem that is central to many chapters in this volume – could not, consequently, have been within the scope of Polanyi's or Arendt's analysis. Likewise, Foucault's concepts of biopower and biopolitics were not developed with forms of biological life defined by gene sequences or stem cells in mind. In studying such domains, the chapters explore how these classic diagnoses might be directed to contemporary problems.

Reflexive practices – technological, political, and ethical

For Arendt, Foucault, and Polanyi, new awareness of these figures of *oikos* and *anthropos* was linked to new forms of practical and transformative work. Polanyi, thus, examined what he called "social technologies" that intensified control over human activity through new regimes of visibility and discipline – a concern that resonates with important themes in Foucault's work on knowledge/power.[15] Arendt noted that "economic society" was the form through which biological and social life became a preeminent problem for modern politics or, in Foucault's term, biopolitics.

This focus on reflection and on practical and transformative work as central to the forms of *oikos* and *anthropos* today is common to a range of diagnoses of the social condition of the present. The theoretical writings of Ulrich Beck and Anthony Giddens on reflexive modernization provide recent examples.[16] A central feature of these diagnoses is an emphasis on how, in various domains, modern practices subject themselves to critical questioning. David Stark has usefully termed such practices *reflexive practices*.[17] Stark's chapter with Monique Girard in this volume, which examines a new media startup during the Internet boom of the late 1990s, provides one concrete illustration. In a highly uncertain economic, technological, and legal environment, Girard and Stark found managers constantly placing the very organizational model of the firm in question. These managers go so far as to perpetually ask, "What is new media?" making the firm "a project perpetually 'under construction.' "[18]

More generally, we can say that the chapters in this volume consider the forms of individual and collective life as they are reflected upon and valued, constituted and reconstituted, through reflexive practices. In this sense they take up questions that have been richly examined in interdisciplinary work in the social studies of science, which have focused on a particular kind of reflection – technoscientific – and a particular kind of observer engaged in such reflection – scientists.[19] The chapters here examine, on the one hand, a wider range of reflexive practices and, on the other, a wider range of reflexive observers.

We turn first to the diverse forms of reflexive practice examined in this volume. The managers in Girard and Stark's study of a new media firm are engaged in

reflexive practices that can be called *technological*. Following a classic social scientific understanding of technology, such reflection concerns first of all not machines or mechanical applications but the problem of choosing the most appropriate means for achieving given ends or goals, whether these are technoscientific, organizational, or administrative.[20] Thus, in Girard and Stark's example, managers raise questions concerning the appropriate organizational form for achieving certain ends, as well as, notably, the appropriateness of the framework within which questions of means and ends are addressed (thus, their question: "What is new media?").

A second kind of reflexive practice examined in a number of chapters in the volume can be called *political*, concerning the appropriate form and scope of juridico-legal institutions in resolving problems of collective life. In Marilyn Strathern's case, a Canadian state commission reflects on the proper role of public opinion in shaping state regulation of reproductive behavior and seeks to operationalize this opinion through a specific technology of political reason – the social audit. In Janet Roitman's study of trafficking in the Chad Basin, bandits and traffickers reflect on the very terms of political legitimacy in defining their formally illegal activities as "work" rather than as "crime." Nikolas Rose and Carlos Novas examine how groups of individuals invent the categories and practices of a "biological citizenship" by seeking to ground claims to resources and protections on shared predispositions to disease.

A third and final type of reflexive practice examined in the volume can be called *ethical*. Ethical reflection may relate to questions of value or morality. But it may equally relate to ethics in the sense in which the term is used in philosophical discussions: reflection on the problem of how one should live. As Collier and Lakoff discuss in detail in Chapter 2, the ethical reflection examined in these chapters is very much wrapped up with political and technological problems, giving a distinctive form to what they call 'regimes of living.'

Two examples can illustrate these dimensions of 'ethical' reflection. In his chapter on the problem of modeling biodiversity, Geoffrey Bowker shows how ecologists committed to conservation grapple with scientific findings that throw into question the "stable ecosystem," a concept that had served as a basic point of reference for those engaged in environmental politics. By developing technoscientific means to assign an "economic" value to ecosystems without reference to their stability, these ecologists seek to constitute a form of conduct that satisfies both ethical and technoscientific ends. Caitlin Zaloom's chapter on bond traders provides an example of ethical reflection concerned with self-formation. Zaloom examines how calculative action emerges as part of a personal ethos that requires control over one's passions and a strict separation between one's personal life and the world of trading. This ethos of technically rational behavior is actively produced through a range of training procedures, institutional routines, and bodily dispositions.

A second important feature of the reflexive practices examined in this volume is that they involve a broad range of observers in diverse social and geographic positions. At one level, those who are able to participate in 'technological' reflection – whether in the domains of economics, science, technoscience, or administration –

are by definition 'elite.' Many of the chapters that follow are, consequently, concerned specifically with elite subjects: Bill Maurer on the debates over Islamic accounting in a transnational network of economists, auditors, and businessmen; Andrew Lakoff on marketers in pharmaceutical companies; Douglas Holmes and George Marcus on Alan Greenspan; Hiro Miyazaki and Annelise Riles on financial analysts in Tokyo; Aihwa Ong or Kris Olds and Nigel Thrift on highly placed planners, educational administrators, and knowledge workers in Singapore and Malaysia.

But the anthropological significance of reflexive practices seems to lie also in their more general importance for, and availability to, individuals and collectivities in a range of positions. Thus, the chapters examine a diversity of relatively 'peripheral' sites and subjects engaged in technological, political, and ethical reflection: Teresa Caldeira and James Holston on activists in Brazilian squatter settlements; Lawrence Cohen on those who sell their organs in India; Janet Roitman on bandits and traffickers in the Chad Basin; Nikolas Rose and Carlos Novas on "biological citizens" in the U.K.; Vinh-kim Nguyen on AIDS patients in the Ivory Coast.

Global Assemblages

A sense that various kinds of reflexive practices are ever more broadly important for individual and collective life has been chronic to modern social theory. Giddens' recent version of this diagnosis resonates with many of the themes we have raised, emphasizing both the pervasive importance of global forms in modern institutions and what he calls the "displacement and reappropriation" of expertise to a range of nonexpert sites. As Giddens argues:

> The global experiment of modernity intersects with, and influences as it is influenced by, the penetration of modern institutions into the tissue of day-to-day life. Not just the local community, but intimate features of personal life and the self become intertwined with relations of indefinite time-space extension. We are all caught up in everyday experiments whose outcomes, in a generic sense, are as open as those affecting humanity as a whole. Everyday experiments reflect the changing role of tradition and, as is also true of the global level, should be seen in the context of the *displacement and reappropriation of expertise*, under the impact of the intrusiveness of abstract systems. Technology, in the general meaning of 'technique,' plays the leading role here, in the shape both of material technology and of specialized social expertise.[21]

Giddens' passage raises a range of questions. Some he addresses in largely theoretical terms. All deserve further reflection. In what sense is the "experiment" of modernity "global"? What is the nature of this "penetration of modern institutions"? Which "we" is in question in the claim "we are all caught up in everyday experiments"? When are these "abstract systems" intrusive, and when liberatory? Are these processes general to an age we want to call modernity?

In the next section of this chapter, we turn to the final question, which concerns the temporal specificity of the processes under discussion. Here, we further explore the character of those phenomena Giddens associates with "modern institutions" – paradigmatically "material technology" and "specialized social expertise."

As suggested above, we propose to refer to these phenomena as having a "global" quality. In doing so, we mean to emphasize a peculiar characteristic of their foundations or conditions of possibility. Our point of reference is classic: Max Weber's *The Protestant Ethic and the Spirit of Capitalism*. The immediate topic of *The Protestant Ethic* is the relationship of modern capitalism to the distinctive this-worldly asceticism found in Protestantism. Its *problem*, however, concerns the significance for human life of the "specific and peculiar rationalism" that, Weber claimed, initially emerged in "Western civilization."[22] The theme is set out in a late Preface, whose famous and cryptic first sentence reads: "A product of modern European civilization, studying any problem of universal history, is bound to ask himself to what combination of circumstances the fact should be attributed that in Western civilization and in Western civilization only, phenomena have appeared which (as we like to think) lie in a line of development having universal significance and validity."[23] The passage jars relativistic sensibilities. Some close reading is required.

In this famous passage, the word "universal" appears twice. As Tobias Rees has explained to us, the two occurrences translate two distinct German words that have very different meanings.[24] In its first usage – "universal history" – "universal" means "all-encompassing." "Universal history," thus, covers all times and places. In its second usage – which refers to a "specific and peculiar rationalism" – universal refers to phenomena whose significance and validity are not dependent on the 'props' of a 'culture' or a 'society.' They are rather, to repeat Giddens' phrase cited above, "based on impersonal principles, which can be set out and developed without regard to context." In calling the "specific and peculiar rationalism" that interests him "universal," Weber does not deny its specificity, but also emphasizes this unusual feature of its "validity" or "foundations." Thus, on the one hand, Weber traces economic rationalism through the norms and dicta of the Protestant ethic. On the other hand, this rationalism does not depend on these cultural origins: "Today the spirit of religion asceticism . . . has escaped from the cage. But victorious capitalism, since it rests on mechanical foundations, needs its support no longer."[25]

It also bears noting that in speaking of a "universal" quality of this rationalism, Weber did not imply a positive value judgment. The parenthetical "(as we like to think)" suggests a critical stance, though one that should be understood in precise terms. It involves neither a sociological reduction to "structure" or a logic of power nor a cultural reduction or relativization of such "universal" phenomena. Rather, it suggests a careful technical analysis – a *technical criticism*.[26] Such a technical criticism would examine both the "mechanical" foundations of these phenomena and the actual processes and structures that define their scope and significance. Its goal is to understand how they function as a source of tension and dynamism for the forms and

values of human life; that is, to grasp how they structure a certain class of anthropological problems.

Global forms

This second sense of 'universal' captures what we mean by 'global.' Our definition might be clarified through an illustrative contrast. In the anthropological tradition, kinship systems or circuits of ritual exchange are "cultural" or "social" phenomena in that they are only intelligible in relation to a common set of meanings, understandings, or societal structures. Their validity is "conventional." It is dependent on being "held" or "accepted."[27]

Global phenomena are not unrelated to social and cultural problems. But they have a distinctive capacity for decontextualization and recontextualization, abstractability and movement, across diverse social and cultural situations and spheres of life.[28] Global forms are able to assimilate themselves to new environments, to code heterogeneous contexts and objects in terms that are amenable to control and valuation. At the same time, the conditions of possibility of this movement are complex. Global forms are limited or delimited by specific technical infrastructures, administrative apparatuses, or value regimes, not by the vagaries of a social or cultural field.

Two examples from the volume can illustrate this point. Elizabeth Dunn examines ISO standards as a global form through the lens of the Polish meatpacking industry. To function, standards require substantial changes in work routines, in the physical organization of production processes, and in record-keeping procedures to allow the production of a vast quantity of information that is 'legible' to health inspectors, regulators, or investors in diverse sites.[29] A standards regime, in this case, functions as an example of what Bruno Latour has called an "immutable mobile."[30] It is a technoscientific form that can be decontextualized and recontextualized, abstracted, transported, and reterritorialized, and is designed to produce functionally comparable results in disparate domains.

Another example can be taken from two contributions on the organ trade. In their respective chapters, Lawrence Cohen and Nancy Scheper-Hughes note a series of technical improvements in extraction, transport, and donor matching that has allowed traded or gifted organs to cross lines of caste, kinship, and social standing. Through this process, remote sites are brought into intimate interaction as organs themselves attain an increasingly 'global' quality. This space of interaction can be conceived as what Andrew Barry has called a "technological zone."[31] It is delimited by specific technological forms, material or transport infrastructures, circuits of interaction, and situated values.

Technoscience – whether material technology or specialized social expertise – may be exemplary of global forms. We will also use the term to describe forms of politics and ethics structured around collectivities to the extent that they are not defined culturally (like the nation as a community of common history, language, and experience) or socially (like an economic class, defined in terms of a structural relationship

to production). Novas and Rose's analysis of biological citizenship based on a common genetic sequence variation in otherwise unrelated individuals suggests one example. Such 'global' forms also emerge in transnational collectivities, as Nguyen shows in his chapter on what he calls "antiretroviral globalism." Nguyen examines a biosocial "vanguard" of individuals being treated for AIDS in Africa that is not defined first of all "socially" but biomedically: in terms of a complex of symptoms that constitutes a disease and in terms of therapeutic technologies – namely AIDS drugs. These biomedical definitions of 'identity,' Nguyen points out, may form a "rallying point for transnational activism in a neoliberal world in which illness claims carry more weight than those based on poverty, injustice, or structural violence."[32]

Ethical problems related to biological life (health and disease, malnutrition and water) and to social life (access to goods and services, abstract freedoms to organization and belief) may also assume a global form. They may apply to biological life; they may be organized through institutions that define humanity as a single political collectivity; and they may be attached to 'global' ethical technologies. Strathern provides one example in showing how the values of liberality and democracy are operationalized through the "flexible" ethical form of the social audit, and made to operate in a diversity of environments.[33] In other cases, different ethical regimes compete for "global" status. Susan Greenhalgh examines such a case in her study of the regulation of reproduction in China. The Chinese government justifies its interventions in relationship to one 'global' ethical form – the imperative for all governments to manage population growth – and is criticized from the perspective of another – the claim that women have a right to control their reproductive decisions.

The actual global

The analytic terms suggested by observers like Barry ("technological zones") and Latour ("immutable mobiles") suggest powerful concepts for understanding the complex infrastructural conditions that allow global forms to function. But the chapters that follow focus equally on how global forms interact with other elements, occupying a common field in contingent, uneasy, unstable interrelationships. The product of these interactions might be called the *actual* global, or the global in the space of assemblage. In relationship to "the global," the assemblage is not a "locality" to which broader forces are counterposed. Nor is it the structural effect of such forces.[34] An assemblage is the product of multiple determinations that are not reducible to a single logic. The temporality of an assemblage is emergent. It does not always involve new forms, but forms that are shifting, in formation, or at stake. As a composite concept, the term "*global* assemblage" suggests inherent tensions: global implies broadly encompassing, seamless, and mobile; assemblage implies heterogeneous, contingent, unstable, partial, and situated.

Thus, a central argument of Dunn's chapter is that although some Polish producers are integrated into global or European markets through the imposition of

standards, others, who lack the resources to comply, are driven into the black market. For the latter group, the imposition of standards creates "a kind of personhood that evokes responses developed under socialism and impelling people to seek out ways to circumvent discipline."[35] This circumvention and its effects are as much part of the assemblage as is the global form itself. Scheper-Hughes' and Cohen's chapters show that although scientific advance and marketization have resulted in the vast extension of the organ trade, distinctive limitations are imposed by national and international 'ethical' and political regulation, and by continuing limitations on the technical capacity to abstract organs from one context to another. The significance of the organ trade for individuals and collectivities – sellers, donors, recipients, buyers, doctors, and brokers – is determined by their respective positioning in relation to this assemblage of elements.

In conceptualizing the form taken by the actual global in these cases we might draw on another image, that of a 'global variable' in a computer program. A global variable is not part of a step in a sequence in any given module but is executed independently. It is used by various parts or modules of a program, and has a common value across modules,[36] acting as a point of communication or interaction among them. However, a global variable does not produce similar effects everywhere, and its function may be limited by direct conflicts with other variables in specific sub-modules of a program. Its operation and significance, thus, are defined as much by these exclusions or conflicts in particular modules as by the variable's global character.[37]

Another series of illustrations can be drawn from chapters that examine the distinctive form of calculative rationality associated with a market environment. Market calculation is an ideal-typic global form. It rests, in principle, on the most "mechanical" foundations imaginable. It can incorporate and allocate anything that is assigned a market value – that is, a value that is expressed in monetary, quantitative, commensurable, and, thus, calculable terms. In this specific, limited, and ideal-typic sense, market calculation is freed of *any* social or cultural considerations, responding only to the global logic of supply and effective demand.

But to examine formal rationalization and calculation in the space of assemblage is to examine their interaction with specific substantive or value orders. Various chapters dealing with neoliberal reform provide examples. Neoliberalism, as Nikolas Rose has defined it, is a political rationality that seeks to govern not through command and control operations but through the calculative choice of formally free actors.[38] It operates, in other words, according to a rationality of a market *type*. As such, it has proven highly expansive and mobile. But neoliberalism's actual shape and significance for the forms of individual and collective life can only be understood as it enters into assemblages with other elements. Thus, in his chapter on neoliberalism and biopolitics in post-Soviet Russia, Collier examines budgetary reforms that seek to rationalize the system of public-sector provisioning by constituting local governments as nodes of decision-making and calculation. The aim of such reforms is not to 'marketize' the public sector but to subtly reengineer the values,

procedures, and substantive forms of the Soviet social, producing one variety of what Neil Brenner and Nik Theodore call "actually existing neoliberalism."[39]

Another function of the study of assemblages is to gain analytical and critical insight into global forms by examining how actors reflect upon them or call them into question. For example, a number of chapters examine situations in which it becomes necessary for actors to shift between modes of reflection and intervention; when, for instance, technical modes of reflection and action break down, and ethical or political reflection – or alternative frames of technical response – emerge in their stead. Vivid examples of such breakdown are found in two contributions on financial prognostication and economic policy-making. Miyazaki and Riles examine how some Japanese financial analysts vacillate between attempts to overcome the failures of stock predictions through ever-more complex techniques of prognostication and an acceptance of such failures as an "endpoint." In the latter case, failure is recognized as an unavoidable condition within which actors must find corresponding modes of rational action, such as real-time response to market data as opposed to prognostication. Douglas Holmes and George Marcus examine decision-making by Alan Greenspan at the Federal Reserve. In an environment of massive complexity and uncertainty, in which policy choice cannot be simply data-driven, a series of highly personalistic factors, ethical dispositions, and bodily states – "hunches," "intuitions," "feelings," stomach aches – come to assume a central role in actual decisions.[40] In examining such elements the authors draw attention to the "*de facto* and self-conscious critical faculty that operates in any expert domain."[41] Examination of this "self-conscious critical faculty" – which Holmes and Marcus call a "para-ethnographic" feature of domains of expertise – points to an understanding of the "social realm not in alignment with the representations generated by the application of the reigning statistical mode of analysis."[42]

Another critical function of the study of assemblages is that it brings to light, in Gísli Pálsson and Paul Rabinow's phrase, "a specific historical, political, and economic conjuncture in which an issue becomes a problem," and, perhaps, allows us to question whether the problems posed about "global" phenomena are the right ones.[43] Thus, in their chapter on human genome projects in the U.K., Estonia, Sweden, and Iceland, Pálsson and Rabinow propose a critique of professional ethics that asks why "the social-scientific and ethical gaze"[44] has focused its attention so firmly on the Icelandic case and ignored others. Maurer, meanwhile, engages debates around the question of whether an "Islamic spirit of capitalism" is in conflict with the underlying task of Western accounting – to provide "decision-useful" information – which presumes a specific universal form of the human: the maximizing individual. He asks whether it is really so obvious that there is a *specific* problem with Islamic banking.

Globalization as Problem-Space

The situations examined in the chapters that follow are indisputably contemporary. But are the problems new? As Giddens has noted, 'modernity' has inherently

'globalizing' tendencies, and the 'global' qualities of technology, politics, and ethics examined in these chapters are hardly novel. How, then, is one to think about the temporal specificity of these processes? And how do they inform a critical engagement with the present?

One set of discussions around globalization has been quick to offer grand diagnoses of contemporary changes both in celebratory proclamations (of capitalism or democracy triumphant, of a new transnational consensus on values) and in visions of cataclysm (the spread of a global monoculture, the hegemony of markets or capital). Another has sought, in a more sober mode, to sort out claims and counter-claims by asking to what extent specific processes associated with globalization are actually 'new'.[45]

The contributions here seem to be engaged in a somewhat different project. They frame 'the present' in terms of specific trajectories of change: of techniques for compiling species databases (Bowker); of transplant technologies (Scheper-Hughes and Cohen); of state budgetary institutions through the 20th century (Collier); of stem cell research (Franklin); of management consultancy (Olds and Thrift); or of shifts in birth policy in China (Greenhalgh). These trajectories of change do not add up to the grand structural transformations of Schumpeter's "thunder of world history."[46] Rather, they inscribe what Deleuze has called "little lines of mutation," minor histories that address themselves to the 'big' questions of globalizations in a careful and limited manner.[47]

To illustrate, we may consider a set of chapters that deal with the modern 'social.' Here, "the social" refers not to the framework of sociological analysis ("society") but to a specific range of knowledge forms, modes of technical intervention, and institutional arrangements. These include mechanisms of economic coordination or regulation and institutions of social citizenship that defined the norms and forms of collective life for most residents of urbanizing and industrializing countries over the course of the 20th century.[48]

Discussions of globalization have been filled with broad diagnoses of the transformation of the modern social: claims and counter-claims about the collapse of national economic coordination, the end of social citizenship, or the erosion of social welfare regimes. The chapters that follow do not address the modern social by sorting out these claims in a general way. Rather, through a focus on technologies, infrastructures, and institutions, they seek to understand more subtle transformations in these fields and the specific problems these transformations pose.

Examples can be drawn from two chapters on Latin America and two chapters on Southeast and East Asia. Taking the Latin American cases first, chapters by Lakoff and by Caldeira and Holston address the transformation of modern social welfare in the contexts of neoliberal reform and democratization, processes whose coupling forged key dynamics of structural change in the region in the 1990s. Lakoff examines the transmutation of epidemiological techniques originally developed in a project of social medicine. In the context of the modern social, such techniques were meant to yield information about disease patterns in a general population. These data would, in turn, imply a 'public' response in the form of policy. Today, as the project of social

medicine has broken down, these techniques are abstracted, transported, and reterritorialized, as the private sector has adopted epidemiological models to build databases that record prescription rates of psychiatric specialists in Argentina. These models are deployed not in the name of a 'public' project of social medicine but of a private strategy of transnational corporations to increase drug sales by rewarding physicians who prescribe them, bringing private corporations, afflicted patients, and state regulation into new alignments. Caldeira and Holston examine shifting technologies of modern urbanism in Brazil. As the political franchise has been expanded through constitutional reforms, previously excluded groups are now appearing in the political sphere through claims on core benefits of social citizenship such as access to basic utilities and social services. But neoliberalism has undermined the bases of social citizenship by either rolling back or privatizing social services. Resulting shifts in social welfare, marketization, administration, and political franchise are reconfiguring the field of biopolitics.

Two chapters on East and Southeast Asian cases examine tensions between national identity and new citizenship regimes that are oriented to incorporating those who can most effectively participate in and promote contemporary knowledge economies. Ong's chapter examines neoliberal strategies for developing knowledge-driven economies in Malaysia and Singapore. Technocrats have sought to create new "ecologies of expertise" by extending social and citizenship rights to expatriate scientists. Such efforts create tensions between those who consider themselves proper members of the 'nation' and the institutions through which the state assigns certain rights and privileges. What is more, a relaxed approach to global research standards has sparked debates by actual citizens as to the proper avenues for curbing potential abuses by foreign experts.

Olds and Thrift, finally, examine elite business education institutions in Singapore that are used to promote a newly intensified form of citizenship that emerges in a context where "ideal citizens" are centers of calculation. In contrast to the passive citizenship of post-World War II projects of social modernity these institutions are defining forms of citizenship through which "accumulation becomes the very stuff of life, through persuading the population to become its own prime asset – a kind of people mine . . . of reflexive knowledgeability."[49]

Assemblage, reassemblage

In the past few years, a series of significant shifts – which should not be presumptively understood to follow a single logic – have led some observers to speculate about the end of the moment when 'globalization' seemed to capture something essential about the present. The collapse of the stock bubble focused on internet, communication, and energy stocks and the collapse of corporate spending in the United States have not only had an immediate economic impact but may affect the rate of technological change as major corporations reign in investment on research and development. At the same time, a series of reactions to neoliberalism – whether manifest in privatization, capital market liberalization, or social-sector reform – have

also gained momentum. These include the response to the Asian financial crisis and more recent developments in Latin America, where democratic elections have brought to power populists whose platforms include anti-globalization positions. Finally, the events of September 11, 2001, and the succession of conflicts and policy shifts that followed them have broadly changed the tenor of world affairs. The period from roughly the end of the cold war to 9/11 was a decade in which many technological, political, and ethical problems seemed to be organized around the insistent spread of global forms; the 1990s were, to borrow a technical term from Michel Foucault, a governmentality decade. The dynamic changes were occurring along the axis of governmentality and biopower. Today, security and sovereignty are increasingly active sites of problematization, yielding new tensions and problems.[50]

This emerging state of affairs has provoked another spate of epochal and totalizing proclamations about the present. Triumphal visions abound, although the specifics of these visions have shifted. On the other hand, the anti-globalization movement seems to have shifted its analysis – unblinking, unperturbed, and unaltered – from largely political–economic claims to the global war on terrorism. Millennial themes and grand diagnoses have been deftly redirected from globalization to a post-globalization era.

As we have tried to show in this chapter, the contributions to this volume suggest a different approach. They are engaged in a form of inquiry that stays close to practices. Their mode of diagnosing the anthropological significance of these practices stays close to specific problems. They may give up, thereby, some generality, politics, and pathos. But for that, perhaps, the approach they suggest remains more acute, adroit, and mobile than grand diagnoses. It does not suggest an absence of a critical stance. Indeed, each chapter presents an analytic or critical response to changes that are at the center of political and ethical debates. But in these politically and morally freighted domains, relations of power – or, for that matter, relations of virtue – and appropriate avenues of response are not always immediately obvious. Indeed, these chapters share a sense that the fields of moral, ethical, or political valuation and activity are shifting, and that, consequently, these fields should themselves be a central object of inquiry.

Accordingly, it remains important today to reflectively cultivate more partial and cautious positions of observation that nonetheless grapple with "big" questions. It may be helpful, in this light, to ask how the tools and examples presented in this volume can be relevant to understanding contemporary shifts, and what new sites of research might be opened by an approach such as the one we have outlined.

Neoliberalism today remains a pervasive form of political rationality whose formal and 'global' character is allowing it to enter into novel relationships with diverse value orientations and political positions. Thus, in Latin America, the election of populist leaders in Brazil and Argentina has not meant the immediate backlash against 'globalization' that some observers – and "financial markets" – expected. Consequently, we should seek to understand the anthropological significance of what

will certainly prove to be novel accommodations between new populist policies of social welfare or job creation and neoliberal technologies of reform that use 'economic' strategies of formal rationalization. We might also expect readjustments in the balance between neoliberalism and security as guiding orientations in world affairs. Many parts of the world that seemed, as Manuel Castells has written, "structurally irrelevant" during the 1990s have come to the focus of attention. With growing awareness of the role of parts of Africa, the Caucuses, Afghanistan and Pakistan, Indonesia, and the Philippines as logistical bases for international terrorism, the problem of bringing these areas into grids of security is increasingly vexing for the richest and most powerful countries in the world. Security, economy, and sovereignty are in motion.

The biosciences and information technology will also remain a site of dynamic change in this new context. As Donna Haraway long ago pointed out, the generation of information technology that boomed during the 1980s and 1990s, largely in the private sector, was the product of state intervention and, specifically, the military–industrial complex.[51] Today, the military is increasingly reliant on private companies for technology in everything from GPS systems to remote satellite imaging to identification technology to warfare simulations to biodefense research. In this context, questions are being raised concerning the maintenance of proprietary access to strategic information and to technology that is now being disseminated in part through market logics.[52] Related problems may emerge in the biosciences. Private research is newly significant for the 'public' goals of security today, and would become dramatically more so in the event of a bioterrorism attack. Continuing debates around the distribution of AIDS drugs in poor parts of the world and new diseases such as SARS impose political, ethical, and technological pressures on the relations among science, market mechanism of distribution, and the actual geography of afflicted or threatened populations.[53] These shifts trace little lines of mutation that disarticulate and rearticulate elements, forming new assemblages that will be the sites, objects, and tools of future reflection.

Notes

1 We acknowledge the comments and suggestions of Jennifer Collier, Ruth Collier, Talia Dan-Cohen, Andrew Lakoff, Shannon May, Tobias Rees, and Antina von Schintzler. We also thank the contributors to this volume for their input on various formulations of the ideas in this chapter.

2 Ulrich Beck, Anthony Giddens, and Scott Lash, *Reflexive Modernization: Politics, Tradition, and Aesthetics in the Modern Social Order* (Cambridge: Polity, 1994); Manuel Castells, *The Rise of Network Society* (Oxford: Blackwell, 1996); J. Timmons Roberts and Amy Hite, eds., *From Modernization to Globalization: Perspectives on Development and Social Change* (Oxford: Blackwell, 1999); Saskia Sassen, *The Global City: New York, London, Tokyo* (Princeton: Princeton University Press, 1991).

3 Michael Burawoy, ed., *Global Ethnographies* (Berkeley: University of California Press, 2000); Jean Comaroff and John Comaroff, *Millennial Capitalism and the Culture of Neoliberalism* (Durham, NC: Duke University Press, 2001).

4 Arjun Appadurai, "Disjuncture and Difference in the Global Cultural Economy," in *The Anthropology of Globalization: A Reader*, Jonathan Inda and Renato Rosaldo, eds. (Oxford: Blackwell, 2002); Mike Featherstone, *Global Culture* (London: Sage, 1991); Fredric Jameson and Masao Miyoshi, *The Cultures of Globalization* (Durham, NC: Duke University Press, 1998); Karen Fog Olwig and Kirsten Hastrun, eds., *Siting Culture: The Shifting Anthropological Object* (London: Routledge, 1997).

5 See, for example, Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993), and "When Things Strike Back: A Possible Contribution of 'Science Studies' to the Social Sciences," *British Journal of Sociology* 51(1), January/March 2000, pp. 107–123; Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002); Paul Rabinow, *Anthropos Today: Reflections on Modern Equipment* (Princeton, NJ: Princeton University Press, 2003); David Stark, "For a Sociology of Worth," Department of Sociology, Columbia University, unpublished MS.

6 See the first chapter of Latour, *We Have Never Been Modern*.

7 See also Sarah Franklin, Celia Lury, and Jackie Stacey, *Global Nature, Global Culture* (London: Sage, 2000).

8 For example, Gilles Deleuze and Feix Guattari, *A Thousand Plateaus* (Minneapolis: University of Minnesota Press, 1987); Gilles Deleuze, *Foucault* (Minneapolis: University of Minnesota Press, 1986), particularly the chapter "A New Cartographer."

9 Sarah Franklin, "Stem Cells R Us: Emergent Life Forms and the Global Biological," Chapter 4, this volume, p. 67.

10 Giorgio Agamben has pointed to the relationship between Foucault and Arendt in his *Homo Sacer: Sovereign Power and Bare Life* (Stanford: Stanford University Press, 1998). The relationship between Foucault and Polanyi is, so far as we know, largely unexplored.

11 Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Pantheon, 1971).

12 Biology, society, and culture are Hubert Dreyfus and Paul Rabinow's gloss on Foucault's triadic "finitudes" of life, labor, and language, in *Michel Foucault: Beyond Structuralism and Hermeneutics* (Chicago: University of Chicago Press, 1982).

13 Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1958).

14 Karl Polanyi, *The Great Transformation* (Boston: Beacon, 1957), pp. 120–121.

15 Thus, Jeremy Bentham's social technologies were of central interest to both thinkers, although Polanyi seems to have thought more deeply about the relationship of such technologies to liberal thought.

16 Beck et al., *Reflexive Modernization*.

17 David Stark used this term at the workshop "*Oikos* and *Anthropos*: Rationality, Technology, Infrastructure," Prague, The Czech Republic, April 2002.

18 Monique Girard and David Stark, "Heterarchies of Value: Distributing Intelligence and Organizing Diversity in a New Media Startup," Chapter 16, this volume, p. 294.

19 See, for example, Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, MA: Harvard University Press, 1988).

20 For basic definitions, see Max Weber, *Economy and Society* (Berkeley: University of California Press, 1978); and Niklas Luhmann, *Observations on Modernity* (Stanford: Stanford University Press, 1998).

21 Giddens, "Living in a Post-Traditional Society," pp. 58–59.
22 Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (London: Routledge, 1992), p. xxxviii.
23 We have adopted two changes to Talcott Parsons' standard 1930 translation that were suggested and explained to us by Tobias Rees. First, "significance and validity" are substituted for "meaning and value" in the original. "Meaning" could be understood as "significance" in English, but the latter is less ambiguous, since it cannot be confused with "sense." "Value" can be assumed to be a mis-translation, or in any case an imprecise translation, based on Weber's later admonitions in this text that science cannot ground value judgments. Validity refers to standards of proof or demonstration of adequacy or instrumental effectiveness, not to value in the sense of a normative judgment. Second, "cultural," which in the original modifies "phenomena," is omitted. As Rees explains, the German root *Kultur* would in this case have implied a contrast with "natural." Thus, "cultural phenomena" are best understood simply as "human" phenomena. The omission of "cultural" avoids confusion with the American anthropological "culture" (Tobias Rees, personal communication). The first amendment can also be found in the recent translation by Peter Baehr and Gordon Wells (New York: Penguin, 2002).
24 Rees suggested the following interpretation of the distinction between *Universalgeschichte* (universal history) and *Universelle* (universal significance and validity).
25 Weber, *The Protestant Ethic*, p. 181.
26 For the original usage, see Max Weber, *The Methodology of the Social Sciences* (New York: Free Press, 1949). The concept is also developed in Stephen J. Collier, "Post-Socialist City: The Government of Society in Neoliberal Times," Ph.D. dissertation, University of California, Berkeley, December 2001.
27 Leo Strauss makes the distinction in these terms in "On Aristotle's Politics," in *The City and Man* (Chicago: University of Chicago Press, 1964), pp. 14–15.
28 Franklin et al., *Global Nature, Global Culture.*
29 Charles Sable Prokop, Jane E. and Charles F. Sabel, "Stabilization Through Reorganization? Some Preliminary Implications of Russia's Entry into World Markets in the Age of Discursive Quality Standards," in *Corporate Governance in Central Europe and Russia*, R. Frydman, A. Rapaczynski and Carol Gray, eds. (Budapest: CEU Press, 1996).
30 Latour, *Science in Action*, p. 227.
31 Andrew Barry, *Political Machines: Governing a Technological Society* (New York: Athlone Press, 2001).
32 Vinh-kim Nguyen, "Antiretroviral Globalism, Biopolitics, and Therapeutic Citizenship," Chapter, 8, this volume, p. 143.
33 See Lawrence Cohen, "Where it Hurts: Indian Material for an Ethics of Organ Transplantation," *Daedalus* 128(4), 1999, pp. 135–165.
34 See Kris Olds and Nigel Thrift, "Cultures on the Brink: Reengineering the Soul of Capitalism – On a Global Scale," Chapter 15, this volume.
35 Elizabeth C. Dunn, "Standards and Person-Making in East Central Europe," Chapter 10, this volume, p. 175.
36 Oxford English Dictionary Online; http://www.oed.com, 2003.
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38 Nikolas Rose, "Governing 'Advanced' Liberal Democracies," in *Foucault and Political Reason: Liberalism, Neo-liberalism, and Rationalities of Government*, Nikolas Rose, Andrew Barry, and Thomas Osborne, eds. (London: UCL Press, 1996).

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40 Douglas R. Holmes and George E. Marcus, "Cultures of Expertise and the Management of Globalization: Toward the Re-Functioning of Ethnography," Chapter 13, this volume, pp. 236–237.
41 Ibid., p. 237.
42 Idem.
43 Gísli Pálsson and Paul Rabinow, "The Iceland Controversies: Reflections on the Transnational Market of Civic Virtue," Chapter 6, this volume, p. 94.
44 Pálsson and Rabinow, "The Iceland Controversies," p. 92.
45 See, for example, the chapters in David Held and Anthony McGrew, eds., *The Global Transformations Reader: An Introduction to the Globalization Debate* (Malden, MA: Polity Press, 2000).
46 Joseph Schumpeter, "The Crisis of the Tax State," *International Economic Papers* 4(7), 1954.
47 Gilles Deleuze, "Foreword: The Rise of the Social," in Jacques Donzelot, *The Policing of Families* (New York: Pantheon, 1979).
48 Deleuze, "The Rise of the Social."
49 Olds and Thrift, "Cultures on the Brink," p. 272.
50 For one perspective on sovereignty and biopolitics, see Aihwa Ong, "Graduated Sovereignty in South-East Asia," *Theory, Culture and Society* 17(4), August 2000, pp. 55–75.
51 Donna Haraway, *Cyborgs, Simians, and Women: The Re-Invention of Nature* (New York: Routledge, 1991).
52 For work on neoliberal technologies of administration and remote satellite imaging, see Lyle Fearnley, "The Global Market and Technologies of Security: Shifting Strategies within U.S. Remote Sensing Satellite Programs," Columbia University, unpublished MS; Ryan Bishop and John Phillips, "Sighted Weapons and Modernist Opacity: Aesthetics, Poetics, Prosthetics," *Boundary 2* 5(13), 2002, pp. 161–191; Ryan Bishop and John Phillips, "Unmanning the Homeland," *International Journal of Urban and Regional Research* 26(3), September 2002, pp. 620–625.
53 Aihwa Ong, "Assembling around SARS: Technology, Body Heat, and Political Fever in Risk Society," in *Ulrich Beck und Zweite Moderne*, Natan Sznaider and Angelika Poferl, eds. (Dusseldorf: Nomos Press, 2005).

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