

technological processes that go into the construction of the communicative infrastructure and that, on a hidden level, define the conditions under which we may access and participate in the exchange among pre-defined equals.

((8)) 5. Finally, it is impossible to resist what may well be the most common objection: the neglect of the global disparity that contradicts Schäfer's confident Pangaeian prospects. Nobody knows this better than Schäfer himself who admits that his narrative is "tinged with some old-fashioned optimism" (6). (It is also tinged with the repeated usage of the first person plural—but who is this 'we'?) Let me counter this optimism by employing Schäfer's Wegenerian framework. During the late Triassic period, Pangaea began to break up into two continents, separated by the Tethys sea, with Laurasia to the North and Gondwanaland to the south. Is this not a more appropriate depiction of today's globalization? Of the increasing inequality, the wholesale demotion of lesser-developed regions, of—to echo Niklas Luhmann's account of Brazilian slums—the simple and radical exclusion of those who are not even suppressed or exploited anymore because there is nothing left to exploit? Who could not "talk back" even if they considered a dialogue with Laurasian historians a worthwhile undertaking? Before leap-frogging backward or forward into Pangaea, let us consider the necessary intermediate stage, the separation from Gondwanaland. Should we not try to navigate the Tethys sea rather than assume that it is about to disappear?

Adresse

Prof. Dr. Geoffrey Winthrop-Young, University of British Columbia, Department of German Studies, Vancouver B.C. V6T 1Z1, Canada

Replik / Response

Making Progress with Global History

Wolf Schäfer

((1)) All journals create a testing ground for ideas: this journal, however, more so than others. Pulling its contributors into its virtual forum, EWE provides a venue for the examination of diverse topics. So here we are, but why are we here and what is our issue?

Some of us suppose that there is something new out there that puts history on a global footing — call it a new historical situation, a new age, or a new constellation of problems. We are observing an enormous convergence of material and intellectual developments with worldwide consequences, a history that is going far beyond national and topical histories. We think that the changes that are making history global require

their own branch of scholarly investigations. This assumption, however, is not universally agreed upon, and that is the reason we are here, talking about the sense, or the nonsense, of Global History.

1. Old Debate and New Ideas

((2)) "The New Global History" (NGH) was written for my critics, my friends, and myself. I wanted to explore the road to Pangaea Two, explain my ideas to my friends, and provide my critics with an article that would not speak safely about the historiographical challenge posed by contemporary globalizations, but instead would outline a strategy to answer them. Mixing these reflexive and communicative interests, my essay shows both my process of thinking as well as my current conclusions. Take, for example, my stance concerning World History. Initially rather polemical and concerned about the existing traces of Oswald Spengler and Arnold Toynbee, I am now more impressed by the possibilities of World and Global History as complementary approaches.¹ Hence, the "contradictory" statements about World and Global History are also the footprints of a trajectory, which, according to Geoffrey Winthrop-Young's ((4)) ironic gloss, transported me from an "Oedipal determination ... to conciliatory pluralism."

((3)) To turn from the old debate to the new ideas, I would like to defend the "New Global History" with regard to historiography and historical reality. In the early nineties, the Global History Group did not team up with the Wallersteinians, world historians, big history proponents, or any other old or new historiographical party. We started out "bowling alone," yet found ourselves terminologically in the company of World History.² Until Bruce Mazlish distinguished us as the "new" Global History, the identity of Global History seemed unclear.³ Still, Raymond Grew ((6)) has not been won over and "curmudgeonly" rejects that label with the forward-looking reason that if Global History succeeds, "the adjective is not needed." Although I agree, I have no problem using it *as long as* global historians are struggling to succeed. The methods that are germane to the "real" world are surprisingly relevant when it comes to the propagation of new ideas in the academy. I have learned this lesson by observing the academic world on two continents and by studying Justus Liebig's mid-nineteenth century fight for the establishment of Agricultural Chemistry. The institutionalization of Liebig's new science required strategies for advancement that were not provided by the "mentality of the 'pure' scholar" (Krohn & Schäfer, 1976: 46 ff).

((4)) Ascertaining the novelty of global history is truly warranted by the fact that "there are two kinds of global history at work in the world today."⁴ Earth's geophysical history was global for 4.6 billion years; it had been the planet's first global history, and now the globalization of human history has become the second. People are realizing that the Earth and humans have formed a "coupled system."⁵ Countless individuals, new social movements, and three environmental world summits (Stockholm 1972, Rio 1992, and Johannesburg 2002) have broadcast the crucial importance of learning to navigate Earth's two global histories. It is no longer outrageous to note

that the global interpenetration of natural and human history constitutes a large historical challenge and change. The new global history is happening in laboratories and oceans, animals and rocks, heat waves and scientific papers, as well as in satellites and electronic maps that fuse the geobody of this planet with the technobody of Pangaea Two.⁶ It would be very surprising if the new global history were not met with political conflict, substantial research attention, increasing interdisciplinary work, and the rethinking of old assumptions. The two-global-histories argument triggered little protest from my critics. In fact, Daniel Davis ((1)), John McNeill ((2)), Hans-Heinrich Nolte ((4)), and Fred Spier ((3)) acknowledged the need to investigate how the socio-natural bonds between Earth and humans are changing. Only Edgar Selzer found my intermingling of natural and human history “inadmissible” (*unzulässig*): “The geophysical ground has nothing to do with the spiritual world” ((4)).⁷ Of course not, Selzer’s “spiritual world” is probably still made of Aristotelian quintessence.⁸

((5)) Think of the numerous overlapping waves created by a conversation that involves *history* (Grew, Küttler, Manning, Mazlish, McNeill, E. Nolte, H.-H. Nolte, Spier, Stearns), *sociology* (Albrow, Schmidt, Tilly, Vester), *economics* (Kobrin, Thompson), *philosophy* (Fleischer, Selzer), *geophysics* (Davis), *physics* (Locker), *political science* (Rotermundt), as well as *literary criticism* (Winthrop-Young), and it will become clear that the whole array of constructive and destructive arguments is impossible to grasp in its full complexity, especially when one considers the amount of tacit knowledge implied. Yet believing that a debate about global history can only begin and that Global History cannot be advanced by obscuring its controversial points, but only by stating them as clearly as possible, I feel less anxious about being a bit subjective in this part of the discussion.

2. What Is History?

((6)) Edward Hallett Carr posed this question some forty years ago in a book of that title, and I still like a lot of his answer, not least the utopian optimism and glimpses of global history in the book’s last chapter (“The Widening Horizon”), but especially his view that historical work ought to provide “the key to the understanding of the present” (1986: 20). Yet, no answer to this perennial question can stay in circulation without change. Whenever history has changed, the understanding of what history is has changed too. And whenever one argues that history has changed, one might as well renew Carr’s question and start looking again for the right answer. But there’s the rub. Can one distinguish between right and wrong answers to the What-Is-History question?

((7)) I have touched upon the question of truth in my essay ((24)) and suggested that the historian qua historian may be able to avoid the popular but dubious “truth” of relativism. I tried to show that our questions can be answered by historical-critical research with sufficient certainty, if we formulate them to capture historical change. Yet, Rainer Rotermundt ((10)) mistakenly interpreted the casting of my vote for the study of “controversial truths” as an effort to be politically correct. My point was that *as a historian* “I have access to

temporal truths only” — a position that I would like to maintain. If one were to explore answers to the question “What Is History?” historically, one would find that all past statements can easily be handled with the historian’s tools. If we pose the question “What is history?” anew, however, as we must as “new” global historians, we are on our own. For a moment, we become philosophers of history forced to give our best answer under conditions of profound uncertainty.

((8)) Some critics found fault with the so-called “human factor” not receiving a higher rank in NGH. Martin Albrow ((2)) requested “a stronger concern for human agency.” Helmut Fleischer ((8)) reminded me of “the ‘personal basis’ of all operations and relations.” Alfred Locker ((9)) insisted that an interesting Global History “would have to look for the ‘human factor’ first and foremost.” Hans-Heinrich Nolte ((6)) affirmed, “Only humans are actors.” And Edgar Selzer ((25f, 28)) discovered a shocking “disdain for humans” (*Menschenverachtung*) in my account of history. The tenet of these commentaries is incidentally in line with Carr’s proposal “to reserve the word ‘history’ for the process of enquiry into the past of man in society” (1986: 42). From the point of view of some of my critics, I am guilty of underselling history. However, I must fault that point of view as too anthropocentric. I hold that global history does not just pivot around the “man in society.” Men, women, and children as well as nature, society, and the creatures of Pangaea Two are players (actors) in the ever more crowded arena of the present. My understanding of history pivots around change. I thus charge Global History with the process of inquiry into the causes and consequences of global change and some of my critics with downplaying, if not missing, the transhuman novelties of global history.

((9)) Changing conceptions of history are not new. History has progressed from the history of elites to the history of nations, from national history to social history, and from history without women to women’s history. Historians have included the people “without history,” ordinary, subaltern, and queer people, and there is no reason as to why this progressive tendency of history should stop expanding. Carr wrote in 1961: “It is only today that it has become possible for the first time even to imagine a whole world consisting of peoples who have in the fullest sense entered into history and become the concern, no longer of the colonial administrator or of the anthropologist, but of the historian” (1986: 144). In 2002, we can see that history has grown again and profitably branched out into an environmental variety. Plants⁹ and animals, rivers and clouds, floods and deserts have become valid historical subjects. And now the good, the bad, and the ugly of global history is knocking on our door: the Internet as a Pangaeian history of nerds and nodes; the Americanization of foreign cultures; and the traffic in men, women, children, organs, weapons, and drugs from all over the world together with the piracy of rare and precious plants, animals, and artifacts.

((10)) The global scope of contemporary history indicates that partaking in the making of history is no longer the privilege of a social elite, or even of all humans, but rather a distinctive feature of all things on Earth, including humans. The field of Global History is wide open to all sorts of actors, not least humans.

3. Discomfort in Civilization

((11)) Sigmund Freud initially suggested translating “Das Unbehagen in der Kultur” (1930) as “Man’s Discomfort in Civilization,” but his translator found a seemingly better solution: “Civilization and its Discontents.” Freud’s words, however, are perfect for what I would like to address now: the discomfort caused by my use of civilization. I have suggested elsewhere to return to Alfred Weber and Robert Merton and distinguish anew between culture and civilization (Schäfer, 2001). My reasoning in NGH applied that distinction. I am using culture and civilization as technical terms to differentiate between the accomplishments of a) our interactions with first and second nature, the realm of civilization, and b) our interactions with our own kind, the realm of culture. I have argued furthermore in NGH that “contemporary civilization is a global entity in a planetary world of local societies and cultures.”¹⁰ The analytical distinction between civilization and culture, on the one hand, and the added complication of empirically counting *one civilization and many cultures*, on the other, has made some critics uneasy. Defining civilization technoscientifically, as I recommend doing, does not sit well with the cultural traditions of the West, be they elitist or popular, old or new, humanistic or postmodern. Then there is also the problem of civilization in the singular. Counting only one civilization defies the received historical knowledge that assumes that there is always a variety of “civilizations” (cultures in my terminology) in various parts of the world.

((12)) It is perhaps of interest to note that the problem with civilization in the singular came into view when historians tried to map “European” or “Western” civilization. All other civilizations had been comfortably local, and it was not difficult to put them on a world map. Yet, as Geoffrey Barraclough remarked, “It is easy to speak of ‘western civilization,’ but it is extremely difficult to draw its boundaries ... except on a basis of prejudice” (1956: 49). Barraclough solved that problem by stating that it is better in this case not to think of a “civilization within a particular geographical area, but rather of the area where a particular civilization grew up” (50). Unlike modern states, traditional civilizations were never surrounded by sharply drawn boundaries but fuzzy “zones of prestige,” as according to Randall Collins’ (2001) felicitous phrase. Yet returning to Barraclough’s line of thought, I would say that the work of world historians is hardly done by simply noting that “Western civilization” locates its origin; what must be explained is the geographic extension of that civilization. As I see it, the spatial fuzziness and increasing unmappability of “Western civilization” is a leading feature of history in the Protoglobal Period. Drawing on the transcultural universality of modern science, “Western civilization” jumped the localities of the West and raced toward globality in the last two hundred years. Western globalization, however, was anything but peaceful; it conquered the globe with armies, priests, merchants, colonialism, imperialism, racism, and capitalism. The brutality with which “Western civilization” occupied the world has given both “Western” as well as “civilization” a bad name.

((13)) The critical remarks concerning my notion of a global technoscientific civilization range from Wolfgang Küttler’s ((11f)) constructive concerns to Charles Tilly’s ((1-3)) dis-

missal, and include the occasional misinterpretation. For example, Alfred Locker ((13)) misunderstood me when he detected my “intention” to impose the destructive “unity of civilization over the plurality of cultures.” Patrick Manning ((6)) found it “strange” to “complain”¹¹ about world historians studying civilizations “and then to describe contemporary history in terms of a civilization, albeit global and techno-scientific.” Peter Stearns ((17)), Raymond Grew ((4)), and Gert Schmidt ((9)) spotted the frightening possibilities of “technoscientific determinism” and “reification.” And Tilly ((1)) found it necessary to announce *ex cathedra* that the “victorious vision of emerging civilizational unity” is empirically mistaken and theoretically wrong. Tilly’s verdict was made especially poignant by the shortness of his statement.

((14)) The contemporary civilization I am addressing has very little to do with the civilizations of the past. In my scheme, civilization is global and cultures are local. Manning’s “civilizations” are large local cultures that are neither universal nor global.¹² In fact, as long as different languages, customs, cuisines, religions, and other non-universal things of that kind thrive, local cultures will thrive as well (a case in point are the nine German and Austrian critics: all responded in their native language). And, to address Locker, let me add that although I greatly appreciate this pluralism, I also recognize its dangers. Backed by the Mertonian reading of the term and in lieu of a better word, I have proposed to only call the part of history civilizational that deals with first and second nature, embodies the transcultural universality of science and technoscience, has overcome all rivals, and rules globally. Why do I not go further at this point and reach all the way out into “the history of our Solar System, our Galaxy, and even the Universe as a whole,” as Fred Spier demands ((18)) and other “big history” historians do? Perhaps I should, and I am not surprised that some of my colleagues have already gone that far, but what I find historically most interesting happens right now, on this planet, and in near-earth space. I am intrigued by the emergence of reflexive globality on Earth and the attempts to govern our first and second nature with foresight and more technoscience, but I promise: when the global management of our star system becomes an issue, I will gladly join the “big historians.”

((15)) Drawing on the image of a mosaic of local cultures and a single technoscientific civilization does not mean that I have given in to “technological determinism” or “reification.” Everybody knows that these intellectual shortcuts are *verboten*. The fabric of culture is not woven by technoscience, yet technoscience and culture interact on many levels and in many ways. I am hardly a determinist but could probably err on the side of “social constructivism,” because although not everything is socially constructed, more and more things are. I am asking: how do we account for the dynamics of change in contemporary history? Nobody seems to know exactly. Warnings about the “pitfalls” of yesteryear are certainly useful (Tilly ((4)) mentioned Vico and Comte; Schmidt ((3, 6)) invoked Schelsky, Marcuse, and Ellul), but do not insure the traveler against unknown holes in the ground today. Global history is new and uncharted. The old answers are facing the global technobody of Pangaea Two, a new reality. And let me be clear — I am not saying that a technoscientific civilization covering the

whole planet is by default a noble and healthy thing. “Schäfer’s Brave New Globe” (Grew) could admittedly become a nightmare. That nightmare is a real danger since the technoscientific complex of Pangaea Two has grown up in the shadow of history, with technical scrutiny only and not much constructive critical input from the scholars working in the humanities and social sciences (Schäfer, 2002). What I find alarming is not the association with Vico et al. but the prospect of technoscience as the “dark matter” of contemporary history and theory.

((16)) The “civilizational unity” of Pangaea Two is not invalidated by Tilly’s ((2)) examples of global disunity. Indeed, “the world is not obviously homogenizing” and “the moral equivalent of a single continent” is nowhere in sight. But who said it was? In my terms, the “moral equivalent” of Pangaea One would be a global culture, not a global civilization, and that, the mirage of a global culture, is Tilly’s invention. Now the other issue, which should not have become one, concerns the word “unity.” Again, Tilly is right, technoscience is unequally distributed. I have made that point myself.¹³ The unity of technoscience is one thing; the digital divide is another. Think of worldwide capitalism — has that made every human rich and giddy? Technoscientific unity plants the same ones and zeros everywhere. I am talking about the unity that is found in the machines that run Pangaea Two. Is it a serious problem that not everybody has these machines or knows how to build and use them? Yes. Is it a technoscientific problem? No.

((17)) The universal machines of a Pangaeian (technoscientific) civilization can be turned against any local culture as the attacks of September 11th have shown, but much of what one hears and reads about 9/11 is missing that point because many people are yet again confused by the dubious distinction between “civilized” and “uncivilized” behavior.¹⁴ *The New York Times*’ Thomas Friedman wrote one year later, “We can numb ourselves to the world, and plug our ears, or we can try to repair that jagged hole in the wall of civilization by insisting, more firmly and loudly than ever, on rules and norms — both for ourselves and for others” (Sept. 11, 2002, p. A33). Interpreting the events of 9/11 in that old-fashioned way is not new, but terrorists attending school in the target country to pick up the “rules and norms” of flying large passenger jets was something new. The hijackers of 9/11 made every effort to achieve *two things*: first, to attain the required technical (civilizational) skills from the enemy and, second, to severely maim the United States. Thus the perpetrators of 9/11 made *two implicit statements*, namely a) that the technoscientific rules of flying are transcultural and b) that the boundaries of behavior in war and peace are neither universal nor civilizational, but local and socio-cultural.

((18)) Freud saw clearly that humanity has won “power over space and time” and “become a kind of prosthetic God” (1962: 39 and 44), but Freud’s view was also partial to the old understanding in which civilization serves “two purposes — namely to protect men against nature and to adjust their mutual relations” (42). In my view, civilization does the former and cultures try to do the latter. Flying a plane, driving a truck, piloting a boat, designing a bomb, building an x-ray machine, a heart, or a tall building are civilizational skills that cannot be con-

tained for long. The socio-cultural values, however, that are guiding pilots, scientists, engineers, doctors, and architects are not ruled by the laws that apply to the machines of Pangaea Two. These values are not global because they are rooted in local cultures. Thus the narrative¹⁵ of global history derives from the tensions between a technoscientific civilization that is virtually global today and local cultures that are hosting this civilization without abandoning their complex individuality.

4. A Global Time Scale

((19)) My proposal to link historical time to the geobody of planet Earth¹⁶ elicited a number of interesting comments. Ernst Nolte ((3)) agreed, the “global” benchmark leads to preglobal, protoglobal, and global as “the three great periods of world history,” but wished I had paid attention to bolshevism as the “earliest and most militant champion of globalization” ((5)). Grahame Thompson ((6)) found my periodization “perfectly reasonable,” yet longed for information about the current stage of globalization as well as its “end state.” Peter Stearns ((6, 13)) “very much like[d] ... the emergence of a sense of the globe” but was “not comfortable” with the “long” and “undifferentiated” preglobal and protoglobal ages. My friend Raymond Grew ((3)) wondered “if at this stage we even need an overarching periodization” and made short work of mine: “disappointingly conventional without being very helpful.” Heinz-Günther Vester ((7)) also professed disappointment. He found the proposed time scale too “vague” (*pauschal*) and deemed the familiar “distinction of premodern, modern, and postmodern ages” comparatively “illuminating and rich.” Stephen Kobrin ((5, 7)) candidly acknowledged that he prefers his own scheme, “a much more limited historical periodization.” With reference to his understanding “that globalization is *postmodern*,” Kobrin stressed globalization as “a discontinuity in the mode of organization of politics and economics” and took issue “with the idea of a linear progression from the preglobal to the protoglobal to the global.” And Daniel Davis ((6)) simply asked a straightforward question, “What, if any, are the historical equivalents of such [geologic] events that divide time into a ‘before’ and an ‘after’ — not just for a single culture or region, but globally?”

((20)) The geologic time scale, with which Davis works, “is composed of standard stratigraphic divisions based on rock sequences and calibrated in years” (Harland, et al., 1990: 1). The global time scale, which I have proposed, is based on knowledge sequences laid down by the gradual unveiling of the physical geobody. Both time scales are constructed from the vantage point of contemporary knowledge. On the global time scale, the historical present is contained in the uppermost cognitive layer of globalization — the fifty-some years since 1950 that mark the beginning of the Global Age — whereas the most recent epoch of the geologic present, the Holocene, covers the last 10,000 years or so BP (Before Present), which is set at 1950.¹⁷ All digs into the Protoglobal Period and the Preglobal Age originate in the common ground of the historical present. So, one element of the time-dividing event that I would bring up in a conversation with Davis would be the novelty of a global present created by Pangaea Two.

Before the Global Age, all history was experienced with local knowledge in diverse local presents, but with Pangaea Two, humankind acquires a common present infused with global knowledge.

((21)) Yet how shall I respond to the outspoken frustration of my critics (too long, undifferentiated, conventional, and vague)? Maybe I should be allowed to be equally blunt and say that false expectations deserve to be frustrated. For example: Professor Grew followed his critical assessment by suggestively asking, “Does his interesting discussion of map making ((26, 27)) not imply alternative periodizations?” Let me explain why “Yes” would be the wrong answer. To be sure, the mapping of the world has meant as many different things at different times in different cultures as the word “world” itself, but map making does not only exhibit the diversity of cultures, it also shows the constraints of civilization (in my terms). Ray Grew likes to camp on the side of cultural variety; I like the garden of cultural diversity *and* the arena of civilizational progress. Mapping as a cultural activity is extremely rich, has spawned numerous periodizations and can easily afford more, but mapping as a civilizational activity is eventually constrained by the fact that there is only one physical geobody.¹⁸

((22)) My time scale adds a little bit to the end of the geologic time scale and captures the globalization of human history. As the nuclear waste problem in NGH ((18)) indicated, managing globality is not always possible within a shallow time frame. The exploits and consequences of global technoscience can reach far and deep in all directions. Neither the distant past nor the remote future of Earth-time is categorically outside of global history. As global history has begun to seriously affect Earth’s oceans, atmosphere, and land with profound consequences for fauna and flora, the theoretical framework of Global History must make room for the new: the deep temporal and wide spatial thrusts of arcane local ventures like New Mexico’s Waste Isolation Pilot Plant as well as such mundane things as global agriculture. The latter is currently hitching civilizational photosynthesis to the needs of over six billion people.

((23)) The “original globalization of the earth” was employed in NGH ((26)) to provide a basic periodization for global historians pursuing the question: What are the most elemental divisions of the globalization of history to which all the details could be added? Preglobal, protoglobal, and global was my answer with regard to the emerging knowledge of the planet. After all, it took 4.6 billion years for the geobody of the planet to come into clear focus. So I think it is reasonable for global historians to derive the global time scale from cognitive globe making instead of map making per se (though historical world maps can handsomely document the globalization of the globe). The next step would lead us of course from the basic ur-globalization of Earth towards the nitty-gritty of how to appropriately subdivide the fundamental time scale. Stearns’ ((13)) objection against “a long, undifferentiated protoglobal age” is therefore not really on target since I fully agree with him: “a more nuanced protoglobal period” is now in order as well as a serious debate of where to put the historical breaks.

((24)) The movement of my narrative from the vast expanse of the Preglobal Age via a short Protoglobal Period into the Global Age carried me from Pangaea One to Pangaea Two. In other words, these theoretical divisions structure my outline of global history. Are different approaches feasible? Certainly, and they are welcome, but I should like to follow my own blueprint, which should be neither Hegelian nor Habermasian.¹⁹ Each of my three divisions, however, is wide open with regard to the relevant details, not to mention ideas concerning the end as well as the beginning of the transitional Protoglobal Period. These breaks ask for broad discussions. For the end of the Protoglobal Period, I would submit that the launching of earth-orbiting satellites and the mapping of the ocean floors during the Cold War was decisive. For that period’s beginning, I would pursue the conscious and relentless drive of Western Europe since the fifteenth century to unveil the whole geobody.²⁰ And for the particulars and potential subdivisions of the five centuries in-between the two major ages, I would connect my understanding of the development of civilization and technoscience with Jack Goldstone’s (2002) thinking about “engine science” and the Industrial Revolution.

((25)) Does my periodization lead to “the relegation of most human experience to preglobal or protoglobal,” as Stearns ((3)) wrote? I hope not. The objective of my proposal is identification of the stages of globalization rather than “relegation” (downgrading). Finding that human experience up to the present was first preglobal and then protoglobal is a descriptive and not a judgmental statement in the context of my framework. As of now, the Global Age has marked only a few decades and would have to reach many centuries into the third millennium to eclipse the Protoglobal Period. What is harder to imagine though is how the Global Age could ever surpass the scores of millennia accumulated by hunter-gatherers and preindustrial farmers during the Preglobal Age. However, I would argue that “most human experience” should be measured by population figures and not linear length of time. Taking the growth of world population into account would show that the global experience of the last fifty years has already reached more people than the protoglobal experience of the previous five hundred years.

((26)) Billions of people and the autocatalytic acceleration of technoscientific change, plus the factor that the past can only be remembered, reconstructed or imagined, highlight the importance of the present. The “striking notion . . . to begin with the present and work backwards” — is it really such a “misleading” constraint, as Stearns ((13)) made it out? Jared Diamond (1999) did exactly that, working backwards from “Yali’s question” in *Guns, Germs, and Steel*, and he was rather successful. Am I wrong to see the *hic-et-nunc* present as the only gateway to past presents? Have I not answered Thompson’s ((6)) query about the global stage that we have reached, or explained why an “end state” is unavailable for contemporary history?²¹ Do Kobrin’s and Vester’s words in favor of a Postmodern Age invalidate mine ((31)) against it? Many people think that for every point there is an equal and opposite counterpoint, so why do we not end these academic discussions and do as we please, or, in Thompson’s ((5)) words, “Why not celebrate a theoretical pluralism in historical matters?” Well,

I thought such pluralism was a given in the multiparadigmatic humanities and social sciences. But if celebration is wanted, why not honor progress in explaining the historical world around us? To bypass the easy pluralism we could focus on problems that might be solvable, for example the question Davis ((6)) asked, Can you “divide time into a ‘before’ and an ‘after’ – not just for a single culture or region, but globally?”

((27)) If one follows the guiding assumptions sketched above ((4, 14, 20, and passim)), which posit that the global history of Pangaea Two is a new thing, the global boundary-creating event for global history has to be expected in the realm of the common present after 1950. But even if one would not want to commit to this historical theory, it is useful to have that kind of a challenge; otherwise anything would be possible and nothing could be decided. Yet Mazlish ((7)) is right: we have to “justify” this new temporal order empirically. If the assertion about contemporary history becoming global history sounds “too sweeping,” a critical point that my friend Bruce Mazlish ((9)) made, I have to make clear that this is a hypothesis, hence a first and not a last word. A heuristic assumption of this kind is in fact necessary for the empirical research that global historians want to carry out and should not pose the “danger” of historiographical imperialism. Besides, the New Global History is fortunately (or unfortunately) still too marginal for such a threat. However, what I would not say about globalization in this context is that “much of what takes place today escapes its net” (ibid.). If that would be true, the New Global History would lose much of its *raison d’être*. The confluence of globalizations in the second half of the twentieth century has been a very strong force and I would tie our claim to it that human-made global history is an all-encompassing, novel and important reality that is best captured by the New Global History approach. The enormous complexity of today’s physico-techno-socio-cultural reality makes it of course impossible to grasp the whole single-handedly. Thus the continuing validity of various historical methods and approaches is guaranteed and our claim constrained but not discounted.

((28)) Now for what Davis wants us to show him, I would point to the advent of the “Human Domination of Earth’s Ecosystems” (Vitousek, et al. 1997) as the historical equivalent of a globally distinctive geologic event and argue that the time has come to divide the two global histories of Earth and humans into a *before and after the domestication of Earth*. The reproduction of this planet in terms of continuing health and productivity has fallen into human hands and this momentous development is cutting the new global history off from all previous history. To analyze these changes, global historians will have to come to terms with the rapidly accumulating work of thousands of scientists. Valuable sources for global history are therefore articles such as: “The Global Carbon Cycle: A Test of Our Knowledge of Earth as a System,”²² “Human Appropriation of Photosynthesis Products,”²³ “Global Water Resources: Vulnerability from Climate Change and Population Growth,”²⁴ “Species Loss and Ecosystem Disruption: The Implications for Human Health,”²⁵ “Human-modified Ecosystems and Future Evolution.”²⁶

((29)) The discourse about global change has come a long

way since the first campus celebration of Earth Day in 1970. For a while now, the mounting information about increasing land transformation, rising CO₂ concentration, nitrogen fixation, water use, bird extinction, plant loss plus plant invasion, marine fisheries depletion, and so on, has led to global efforts. The struggle about what to do, and what not to do, has reached from the social grassroots into the lofty corridors of state and corporate power. The myths are fading away,²⁷ but the road into the future remains unclear: reactionary, conservative, and progressive ideas about the proper relationship between humans and nature are confuting each other, with the mass media weighing in. A recent eleven-page edition of the science section of *The New York Times* appeared under the succinct title: “Managing Planet Earth: Forget Nature. Even Eden Is Engineered.”²⁸ The domestication of Earth is thus contemplated and, step by embattled step, inaugurated.

5. No Conclusion

((30)) Let me say again that the critiques have raised more issues than I could follow up on. I may have found some ideas less tempting than others,²⁹ but have noted a number of hints for later consideration. Those include Locker’s ((11)) suggestion to merge Pangaea One with “Gaia,” the brainchild of James Lovelock and Lynn Margulis, McNeill’s ((9)) assertion that “today’s interconnected system could come crashing down,” and Küttler’s ((13)) request to fill the gap I had left in NGH between the utopian image “of a better world society in the future and the sharp delineation of the ambivalences and risks of the present transformation.”

((31)) I am confident that there is room for ongoing deliberations. The globalization of history is unlikely to approach closure any time soon since history has just reached a new global beginning: humankind is now both blessed and challenged by the unsecured technoscientific power to solve the problems of globality. Good terrestrial management presents arguably the toughest trial for Pangaea Two and, at the same time, the test a technoscientific civilization is best equipped to handle. Failing in this regard is of course possible but may not be tolerable. Earth’s first and second nature are not moving in steady civilizational and political orbits per se; they need continuous alignment and must be permanently monitored or else they may steer into an ill-fated direction as far as higher life on this planet is concerned.

((32)) Francis Bacon’s “Great Renewal” (*instauratio magna*) is well on its way these days in which the human “right over nature” (2000: 6), which Bacon took as God-given, has been established de-facto.³⁰ Technoscience has turned the Baconian wager — “in artificial things nature accepts the yoke from the empire of man” (224) — into a safe bet, but Bacon’s belief that the human domination of Earth will lead us back into the Garden of Eden finds little, if any, contemporary support. However, the faith of our time that a successful management of Earth’s ecosystems should be possible is not a small one either. I think we must look forward to a fully domesticated Earth with all ecosystems under human and technoscientific control. I also think that we have good reason to consider this prospect with great trepidation and, finally, that making

progress with Global History academically is not irrelevant for the progress the new global history is making in reality.

Notes

1 See NGH ((49)). I still think that the critique of what I have called "traditional" World History is valid. But I also think that the "new" World History has moved on and is no longer burdened by much of that tradition. I can therefore only partly agree with those who, like John McNeill ((6)), find my characterization of World History "too narrow." It would have been illuminating if the new world historians would have used the *Journal of World History* for a discussion about the differences between old and new World History. Yet the "new" World History skirted the vigorous debates of the past — Pieter Geyl (1958) against Toynbee, for instance — and emerged without much theoretical clarification.

2 See NGH ((2)) and Spier ((1)).

3 The distinction was made on our home page (<http://web.mit.edu/newglobalhistory>) and in articles by Mazlish; see for example his "On History Becoming History: The Case of World and New Global History" (<http://web.mit.edu/newglobalhistory/docs/mazlish-on-history-becoming-history.pdf>).

4 See NGH ((3)).

5 See NGH ((16)) and Davis ((1)).

6 These are educated guesses and not proven facts. But global historians and sociologists of science could easily turn the implied assumptions into testable hypotheses for research projects and dissertations.

7 Selzer's critique is as negative as it is imaginative. He found my article "completely unscientific" (*völlig unwissenschaftlich*) because it engaged in "open or clandestine ... neo-Marxist propaganda activities" ((22)). I do not classify myself in ideological terms, yet it is interesting how Selzer found me out ((23f)). According to Selzer, the "new" in NGH does not really mean new, recent, novel, innovative, unprecedented, etc., but "left wing." He deciphered what I really meant by showing the secret meaning of "new" was hatched in the United States by the *New Left Review*, which developed the ideology that caused the trouble in the sixties. It helped Selzer greatly that I had mentioned John Desmond Bernal and used code words like "working class" and "productions of technoscience."

8 See Selzer's book: *Das kommende Goldene Zeitalter der Menschheit: Über die Gründe und die Ursachen des Entstehens der Weltgesellschaft aus der Kultur und Zivilisation des christlichen Abendlandes und der griechisch-römischen Antike* (The coming golden age of humanity: on the causes and consequences of the development of world society out of the culture and civilization of the Christian occident and Greco-Roman antiquity). Published by the author, 2000.

9 See Henry Hobhouse's (1985: viii) book about "five plants that transformed mankind" in which he expressed his impatience with anthropocentric cause-and-effect history in prefeminist terms: "This book is about an unexpected source of change which has hitherto been obscured because man has been looking too closely at his fellow man."

10 See NGH ((50)).

11 Manning thinks that I "complain" about world historians studying civilizations; but I do not complain about that. I said in NGH ((49)): "The new World History is bringing a fresh approach to the study of historical civilizations, while the new Global history is approaching contemporary civilization (Pangaea Two)." This is a balanced and factual statement, ironically with a reference to Manning (see NGH, note 16).

12 I have used that understanding of culture elsewhere to disentangle the popular mix-up between globalization and Americanization (Schäfer, 2001: 311).

13 "The goods of technoscience are, in theory, universal public goods. But the public-good aspect of technoscientific knowledge is severely limited in practice. Almost all technoscientific innovations are produced by a small number of rich countries... Comparatively lucky are the nations that are able to adopt these goods ... since the poor regions of the world, with more than a third of the world's population, are currently excluded" (Schäfer, 2001: 314).

14 Fleischer ((8)) had challenged me "to say something about how the first great 'sign of history' in the new millennium appears from the point of view of *Global History*." I would approach the events of 9/11 in the context of global civilization and local cultures, as I am indicating here, because I am skeptical about dramatic events as reliable markers of historical change; see NGH ((32)).

15 appreciate Winthrop-Young's ((2)) clarification concerning "story" and "narrative."

16 See NGH ((37f)).

17 The zero datum for the geological present is 1950 in accordance with the beginning of radiocarbon dating. The relevant literature gives ages "in years before present (BP) rather than BC" (Harland, et al., 1990: 13). Global historians have yet to be sponsored by British Petroleum. Here is how the symbol BP is explained in Harland et al., the standard work of geochronology: "Before Present (1950), also an oil company and sponsor of this work" (xvi).

18 See *The History of Cartography* published by The University of Chicago Press (<http://www.geography.wisc.edu/histcart>). The available volumes (1: 1987; 2.1: 1992; 2.2: 1994; and 2.3: 1998) deal splendidly with the diverse cultures of cartography in the Preglobal Age. Yet I wonder how the project is going to handle the pragmatic turn of cartography in the Protoglobal Period and the Global Age (vols. 3-5 and vol. 6), i.e. the unveiling of the globe, the scientification of cartography, and the explosive growth of technoscientific Geographical Information Systems (GIS) in the late twentieth century.

19 Well-read scholars can see amazing connections and may disagree. Winthrop-Young ((5, 7)), for instance, read "an updated version of Hegelian dialectics" as well as "Habermas gone global" into my approach. I would think the truth is much simpler and even more unfashionable: I am trying to save a modicum of historiographical progress in general and the distinction between civilization and culture in particular (an appreciation of cumulative progress on account of global civilization but not local cultures).

20 Gavin Menzies (2002), a retired Royal Navy submarine commander, is arguing that Chinese sailors discovered America and the rest of the world seventy years before Columbus; see also www.1421.tv. According to Menzies, the entire globe was "accurately charted by 1428" (411). Even if true, Menzies' hypothesis would only throw into sharper relief what we already know: China was destined in the fifteenth century to lead the "Rise of the East" and could have dwarfed western Eurasia for good if its rulers would not have stopped all further world exploration and overseas trade.

21 See NGH ((37)) and ((33)).

22 See P. Falkowski, R. J. Scholes, E. Boyle, J. Canadell, D. Canfield, J. Elser, N. Gruber, K. Hibbard, P. Höglberg, S. Linder, F. T. Mackenzie, B. Moore, III, T. Pedersen, Y. Rosenthal, S. Seitzinger, V. Smetacek, and W. Steffen in *Science*, 2000 (October 13) 290: 291-296.

23 See Stuart Rojstaczer, Shannon M. Sterling, and Nathan J. Moore in *Science*, 2001 (December 21) 294: 2549-2552

24 See Charles J. Vörösmarty, Pamela Green, Joseph Salisbury, and Richard B. Lammers in *Science*, 2000 (July 14) 289: 284-288.

25 See Eric Chivian in *Canadian Medical Association Journal*, 2001 (January 9) 164: 365-369.

26 See David Western in *Proceedings of the National Academy of Science USA*, 2001 (May 8) 98: 5458-5465.

27 Like the romantic "Mother Earth" concept and the fairy tale of the "ecological Indian;" see Shepard Krech (1999) for the latter.

28 *Science Times*, Tuesday, August 20, 2002, F1-F11.

29 For instance: Locker's ((14)) "historical constant" of suddenly invading "divine dimensions" (*plötzlicher Einbruch göttlicher Dimensionen*) — why not? Because the evidence for this constant is as strong as the evidence x-philes have for the recurrent meddling of extraterrestrials in human affairs.

30 I have argued elsewhere that the "Baconian Age" has just begun: "Das Baconische Zeitalter hat, wenn überhaupt, seine Augen gerade erst aufgeschlagen und nicht nur auf die westliche, sondern die ganze Welt gerichtet. Wir stehen heute nicht schon am Ende, sondern erst am Beginn der weltweiten Ausbreitung des wissenschaftlich-technischen Fortschritts, sowohl im Guten als auch im Schlechten. Wir erleben die Geburt einer globalen Zivilisation, die ohne Rücksicht auf das vorgebliche Ende des Baconischen Zeitalters die weltweite Durchsetzung der industriellen Wissenschaft betreibt" (Schäfer 1998: 84).

Literature

Bacon, Francis. 2000. *The New Organon*. Edited by Lisa Jardine and Michael Silverthorne. Cambridge: Cambridge University Press.

Barracough, Geoffrey. 1956. *History in a Changing World*. Norman: University of Oklahoma Press.

Carr, Edward Hallett. 1986. *What is History?* First Edition 1961; Second Edition 1986 by R. W. Davies. London: Macmillan.

Collins, Randall. 2001. "Civilizations as Zones of Prestige and Social Contact." *International Sociology*, 16, no. 3, September: 421-37.

- Diamond, Jared. 1999. *Guns, Germs, and Steel: The Fates of Human Societies*. New York and London: W. W. Norton.
- Freud, Sigmund. 1962. *Civilization and Its Discontents*. Translated by James Strachey. New York: W. W. Norton.
- Geyl, Pieter. 1958. *Debates with Historians*. Cleveland and New York: World Publishing Company.
- Goldstone, Jack A. 2002. "Efflorescences and Economic Growth in World History: Rethinking the 'Rise of the West' and the Industrial Revolution." *Journal of World History*, 13, no. 2, Fall: 323-89.
- Harland, W. Brian, Richard L. Armstrong, Allen V. Cox, Lorraine E. Craig, Alan G. Smith, and David G. Smith. 1990. *A Geologic Time Scale 1989*. Cambridge: Cambridge University Press.
- Hobhouse, Henry. 1985. *Seeds of Change: Five Plants That Transformed Mankind*. London: Sidgwick & Jackson.
- Krech III, Shepard. 1999. *The Ecological Indian: Myth and History*. New York: W. W. Norton.
- Krohn, Wolfgang, and Wolf Schäfer. 1976. "The Origins and Structure of Agricultural Chemistry." In *Perspectives on the Emergence of Scientific Disciplines*, edited by Gerard Lemaine, Roy Macleod, Michael Mulkay, and Peter Weingart, 27-52. The Hague, Paris, and Chicago: Mouton and Aldine.
- Menzies, Gavin. 2002. *1421: The Year China Discovered the World*. London: Bantam Press.
- Schäfer, Wolf. 1998. "Zweifel Am Ende des Baconschen Zeitalters." In *Natureerkenntnis und Natursein: Für Gernot Böhme*, edited by Michael Hauskeller, Christoph Rehmann-Sutter, and Gregor Schiemann, 76-85. Frankfurt am Main: Suhrkamp.
- . 2001. "Global Civilization and Local Cultures: A Crude Look at the Whole." *International Sociology*, 16, no. 3, September: 301-19.
- . 2002. "Global Technoscience: The Dark Matter of Social Theory" <<http://www.sinc.sunysb.edu/Class/wschafer/GT.htm>>.
- Vitousek, Peter M., Harold A. Mooney, Jane Lubchenco, and Jerry M. Melillo. 1997. "Human Domination of Earth's Ecosystems." *Science*, 277 (25 July): 494-99.

Address

Prof. Dr. Wolf Schäfer, State University of New York at Stony Brook, Department of History, Stony Brook, NY 11794-4348, USA