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David Wilkinson

University of California, Los Angeles, dow@ucla.edu

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GLOBALIZATIONS: THE FIRST TEN, HUNDRED, FIVE THOUSAND, AND MILLION YEARS

DAVID WILKINSON
POLITICAL SCIENCE, UCLA

Premises and contexts now in vogue for discussions of globalization (short-term, present-tense, futurist, policy-oriented, narrowly focused, voluntaristic, purposive) should be supplemented, and to some extent supplanted, by others. Briefly, globalization should be seen as a nested set of processes, including very long-term processes, with deep historical and biological roots, on a wide functional scale, largely driven rather than chosen toward the uncertain ends characteristic of complex systems.

This examination of globalization draws substantively upon the previous work of the author in empirical research on world systems and civilizations [see e.g. Wilkinson 2002, mindful of the context being developed by other workers on large-scale systems, e.g. Chase Dunn, Manning and Hall 2000; Cioffi-Revilla 2000; Cioffi-Revilla and Landman 1999; Denmark et al., eds., 2000; Frank and Gills, eds., 1993; Gills and Frank 1992; Hui, forthcoming; Thompson 2002].

Procedurally, it adopts the research program of complex-systems analysis (a.k.a. "social physics" and "homeokinetics"), developed by A.S. Iberall and associates in pioneering the study of complex systems from the 1970s [Iberall, 1972, 1974; Soodak and Iberall, 1978; Iberall, Wilkinson and White, 1993], a program with whose civilizational applications readers of this journal may be familiar. [Iberall, 1995; Iberall and Wilkinson, 1991, 1993; Iberall, Hassler, Soodak, Wilkinson 2000].

Dynamic empirical-systems analysis, examining change over time in real (vs. mathematical) systems, requires us to decide what are the shortest and longest process times of concern. This involves a generalized form of spectroscopy. Spectroscopy originates as the resolution of compound wave phenomena (e.g. sunlight, noises) into their simpler components, which are differentiated as a range of frequencies. Homeokinetics' more generalized spectroscopy investigates compound processes by differentiating their component subprocesses according to their timescales. [Wilkinson and Iberall, 1986; Iberall and Wilkinson, 1987]

The spectroscopic strategy is to seek out cycles (or parts of cycles) at all time scales in a system where they can be discovered. The enumeration typically begins by defining an end-product, itself perhaps a

system state or process, and then gathering into a coherent description all the competing, neutral, and cooperating processes that produce the end-product. [Iberall, 2001]

What is the relevant end-product in this present inquiry? Globalization in the most general sense should signify an enlargement of some system, entity or process, in its spatial scale, to or toward some limits imposed by Earth's dimensions. For current purposes it is convenient to limit application of the term to human social processes, or human-driven ecological processes, though there may be occasions when an even broader view is desirable. The initial "local" scale need not be specified, and might be as small as a village or band, or as large as a "civilization" or sub-global "world system." [For these terms and their empirical referents, see e.g. Wilkinson 1995]

Given this general sense of the term, there should be no difficulty in raising the question: Which such human or human-driven processes have in the past expanded from local to global scope, or are doing so now?

The usual timescale in which "globalization" is considered is at minimum post-Cold War, at maximum post-World War II. Several answers to the question will be voiced immediately by politician-activists of various stripes who focus on this timescale. [See e.g. the useful survey by Brawley, 2003] In the mostly narrow concept in vogue, globalization means the adoption on the world scale of policies and practices of politically unimpeded flow of money and goods across the borders of states in the world system, much as these commodities flow across the borders of states in the US federal system.

Contemporary "antiglobalists" will also cite, and object to, world banking (loans made available on more or less onerous terms by loan agencies with global reach), world marketing and branding (McDonalds everywhere, even in France), world investing (permitting rapid "capital flight" when local economies produce fear or panic), worldwide production (permitting "runaway production" and "job exporting"), worldwide media reach (promoting "cosmopolitanism"), and worldwide corporate mobility (permitting tax havens" for fleeing headquarters).

A composite nightmare of the antiglobalists might depict a world of six billion social clones, all living in suburban houses, speaking Valley English, drinking coffee at Starbuck's, eating burgers at McDonalds, shopping at Wal-Mart, voting the straight Republicrat ticket—in short, a universal Los Angeles filled with interchangeable Californians burning Iraqi oil in the gas tanks of Japanese cars as they drive to Ethiopian

restaurants where they will drink Australian wines named after French grape-growing regions, as they prepare to jet to Tokyo, perhaps to protest globalization.

Yet it is only the sleep of Reason which (as for Goya) brings forth this dream of monsters; persons fully awake can cheerfully dismiss it to the Land of Nod on sound homeokinetic principles. Far from being a novelty, the diffusing of ethnicity by mixing and remixing has necessarily permeated the human ecumene at least since its occupation 40,000 years before present, or before. [Iberall and Wilkinson 1984b] If cultural homogeneity were an available stable state, it would have been attained long ago. It is not. To the contrary, polyculturality, with continuous remixing at longer and larger scales, is a uniform and probably an obligatory feature for the startup and maintenance of civilizations. [Iberall and Wilkinson, 1985, 1993]

Antiglobal activists have been slower to recognize several other scaled-up processes which, however, certainly involve globalization. [Noted e.g. by Naim, 2003]

The globalization of diasporas is clearly a phenomenon of historic importance. Refugees from war, revolution, drought, and other disasters now flee not only locally (once the only option) but also "to the ends of the earth." A globalizing world job market challenges and mocks localistic anti-immigration laws.

A globalization of identity seems to be in early development, as world individuals begin to count their own increasing "hyphenations"—the "Cablinasian" identity of Tiger Woods is an early attempt to recognize the merging of once segregated identities.

The globalization of criminal enterprise has a remarkable significance, currently underappreciated because of the bad habit of treating illegal production and trade as nonexistent when official production and trade statistics are compiled. The relentless pressure of global consumers for recreational and/or addictive drugs, the absence of equally profitable cash-crop exports in, e.g., Afghanistan and Bolivia, and the inability of localistic anti-smuggling laws to impede the mass consumption of these commodities, suggest that such enterprise will continue to evolve by a sort of natural selection.

Drug syndicates are already well implicated in the local wars and politics of several producer and transit states, and there seems no evident barrier to cartel entry even into the more placid politician-rental market of the wealthier consumer states, where they have an incentive to organize the market, corrupt the police, suppress small-scale com-

petitors, and finance the foes of legalization after the manner of the classic Baptist-Bootlegger coalition (Google search). Issues of branding and product standardization and quality control will doubtless arise. Can global Drug Cartel meetings in neutral Davos or Las Vegas be far away?

The globalization of political movements as a process has been underway, or perhaps one should say restarted, since the French Revolution began the export of liberal democracy by force and propaganda. Liberalism, Socialism, Fascism, Communism, Islam, all broadened their reach and their ambitions from their localized beginnings. It would be premature to suggest that we have reached a final “runoff election,” in which liberal capitalist democracy faces an Islamist coalition in a competition to reorganize global politics into a new “world order,” with or without the enthusiastic consent of those thus restructured. There is certainly more than just a whiff of that prospect in the air at the moment.

In the context of the globalization of political movements, it might be noted more explicitly how so-called “antiglobalization” political work is being done. It is not on local scales, but on a global scale, by long-distance air travelers, so that the antiglobalization movement itself is part of a process of the globalization of political movements. This is more than mere historical irony. We may be witnessing the inception of a global and cosmopolitan “opposition party.”

Those who opposed the Hamiltonian federalization of the American confederal constitution on local-autonomy grounds then united at the federal level, first in opposition, but eventually, as the governing party, later first opposing the Lincolnian centralization of the federal constitution, then later perfecting and administering it to their taste. If the evolution of U.S. Democrats, from Thomas Jefferson through Andrew Jackson, Woodrow Wilson, Franklin Delano Roosevelt, Lyndon Johnson, and Bill Clinton, is imitated among global politicians, we can perhaps foresee that the greatest future expansion of global rule-making and standardization will come at the hands of antiglobalist-run world organizations.

These three under-recognized globalizations—of diasporas, crime and politicians—are here emphasized not for immediate study, though they can all usefully be examined in the globalization context, but rather in preparation for the next argument—that the temporal scale of globalization concepts needs to be drastically stretched. Once we recognize that other processes than those usually considered under the “globaliza-

tion" rubric are in fact also spreading in the world's space, we are more prepared to ask: Are there perhaps yet more social processes which have in the past extended themselves spatially, and have some significance for the current globalization?

As soon as the question is asked, it will be perceived that the answer must be in the affirmative.

Globalization of warfare. The very names "World War I" and "World War II" indicate that a highly significant process, the systemic war-production process, had reached global scope well before the term "globalization" is usually applied. And world-scale warfare was not an abrupt change; even in the 18th century, the French and British fought in America and India.

Globalization of world politics. As regards world politics in general, who would doubt that the United Nations, and before it the League of Nations, incorporate the "globalization" of a diplomatic process, scaled up from the European power-balancing of the 18th and 19th centuries?

Indeed, that once-Eurocentric process could arguably be dated as having been globalized as early as the Boxer Rebellion in Manchu China in 1900, when a multinational force from America, Austria, Britain (and British India), France, Germany, Italy, Japan, and Russia intervened. The mere fact that current history tends to disapprove of this intervention, while approving of other, more recent peacekeeping forces and enforcement actions (some involving not-too-different *dramatis personae*) does not alter this event's claim to be a landmark of the globalization of multinational intervention. Once again, this was a scaling up of a more localized process; a European precedent was provided when the Congress of Vienna responded to the Hundred Days of Napoleon I.

And if we examine diplomacy that did not involve multinational force, the Berlin Conference of 1884-85 (attended by Germany, Austria-Hungary, Belgium, Denmark, Spain, the United States, France, Great Britain, Italy, Holland, Portugal, Russia, Sweden, Norway, and Turkey), which agreed upon rules for the occupation of the coast of Africa and the obligations of "spheres of influence," has a reasonable claim to have initiated the globalization of territorial reallocation. This was a prologue to Versailles 1919 and the World War II conferences, which were also a scaling up of the peace settlements of Westphalia, Utrecht, and Vienna.

The expansion (this time) of European war and diplomacy to encompass the entire globe is the consequence of yet another globaliza-

tion which needs recognition, with an even longer timescale, and of direct interest to civilizationists: the globalization of civilizations/world systems.

This tale has been told previously at some length [Wilkinson, 1987]; suffice it to say here that two localized civilizations/world systems, one from the Nile Valley, the other from Mesopotamia, expanded, collided, fused c. 1500 BC into one "Central" system which continued its expansion, engulfing other world systems as it encountered them and entraining their processes into its own, until in the period between the Opium Wars and World War I. So, it engulfed the last such autonomous systems remaining, the Far Eastern and Japanese, and organized the globe around its then-mostly-European core states, prominently present in the Berlin conference, the Peking expedition, the League of Nations, and the United Nations.

The globalization of world systems, the expansion of a diplomatic-political-military structure, is paralleled by the globalization of the world economy (*oikumene*). This globalization in particular has been attended to by A.G. Frank, Barry Gills, and others [e.g. Gills and Frank, 1992; Frank and Gills, eds., 1993; et al., eds., 2000]; its relation to the globalization of world systems, and especially of the Central system, has also been charted (Wilkinson 1992, 1993). Perhaps the most interesting feature of the expansion in space of the world economy over time is its tendency to precede, to inspire, perhaps even to constrain, the expansion of world politics and the intensification of political organization. In this context, Hord's conclusion, based on study of the growth of connectivity over the millennia, that "[t]he world is going to be united" [2001: 50] is fully consistent with past data on globalization processes.

Both the globalization of world systems and that of the world economy take us at least to a 5000-year timescale. This is also a sort of dream-timescale, a scale of the expansion of political fantasy. I mentioned Napoleon earlier, and will now mention him again, in the context of the globalization of world imperialism.

In a merely territorial and demographic sense, it was Victorian Britain, from whose second (post-American) empire an enormous number of independent states have now emerged, which created the closest approximation (thus far) to a world-empire of the globe. But if we consider vision and will-to-power, the closest approximation (thus far) to a world-empire deliberately aspired to arguably belongs rather to Napoleon than, say, to Hitler or Stalin, let alone Louis XIV, Philip II, Suleiman the Magnificent, Pope Boniface VIII, Julius Caesar,

Alexander, Kublai Khan, or the Ummayyad Caliph Suleiman, to name some other persons with ambitions of limitless scope.

But once we begin to examine the realm of imperialist ambitions and visions, it is clear that our temporal scope must be as large as that of world systems research. The various dynasties whose history is collected as that of "China" had monarchs who aspired, and claimed, to bring divine order to "all under heaven," at least from the Chou/Zhou c. 1100 BC. And as early as c. the 23rd century BC, Naram-Sin of Akkad was (at least in his own inscriptions) "King of the World" (and God into the bargain); he may not have been the first such dreamer.

The scale of operations of the earliest world-state globalizers was by today's standards modest—Naram-Sin, based in the territory of today's Iraq, got no farther than today's Turkey—but the existence of global ambitions, even on the part of those who had no sense of the "round earth" (for which Naram-Sin substituted the "four quarters") seems not just a historical fact but also the indication of a persistent drive. There has existed a will to expand, to and beyond whatever limits were recognized, and it has been repeatedly manifested, with significant effect. Conceived as a distinct form of internal pressure, that boundless "will to power" belongs in our understanding of globalization phenomena, some of which it may still drive as before—Nietzsche would surely think so.

So there exists a 5000-year timescale for globalization as a process, and one not much shorter for globalization as a goal, with both retaining contemporary relevance. Yet 5000 years is not the longest scale with which we must deal in order to comprehend contemporary globalization. There currently exists a consensus (in the admittedly dynamic field of paleoanthropology) that human prehistory saw at least one burst "out of Africa," and probably two. In this burst or bursts, a once highly localized primate—whether best adapted to savannah, lakeshore or rainforest life is not clear—in a relatively short time outdistanced its primate cousins and invaded virtually every land niche from which it could conceivably extract nutrition sufficient for survival and reproduction, learning to devour and digest organisms from algae to zebras, from termites to whales, and becoming thereby the closest empirical approximation to the meaning of "omnivore"—eater of everything—other than perhaps a black hole, or Time itself.

The globalization of the human species is a genuine event, the prerequisite of all other globalizations, and a mystery and marvel as well. How was it accomplished? How did first *Homo Erectus*, probably fol-

lowed in breakout by *Homo Sapiens Sapiens*, outrun even the rat and the cockroach in the occupation of land surface? The relevant long timescale is certainly associated with that of fire-using, which made a variety of new ecological niches (places and foodstuffs) available via campfire and cookery. Fire may even have been the first trade commodity, 300,000 to 1.5 million years ago. [Ofek 2001]

Part of the explanation of the breakout remains entirely germane to the discussion of globalization in the very short term, and in the very constricted sense currently in vogue. The initial species-globalization process was identified in the 1980's as a diffusive one. [Iberall and Wilkinson, 1984a] The diffusion process was driven by a very small, steadily secularly maintained, rate of growth of the entire human population (despite spatially and temporally localized reversals, i.e. population collapses), labeled, ironically, the "Malthusian constant." [Iberall and Wilkinson, 1984b]

The irony in the name lies in the fact that Parson Malthus was concerned with the precariousness of population growth; whereas it is now clear (as would not have been the case in 1799) that a long-term "geometric" (i.e. exponential) rate of growth has been somehow sustained or restored over a many-tens-of-thousands-year timescale. Malthus feared an imminent general population crash, and preached self-restraint; instead there has been a gradually increasing crush, (The exponent in the exponential growth is very small.)

The "crush" is of central importance to the comprehension of globalized social processes. Very early indeed, the expanding human population ran into a container—the round earth, with its world ocean which could be colonized across but not in or on. An expansion which had previously maintained an essentially constant population density [Iberall and Wilkinson, 1984a] nonetheless continued, but thereafter had repeatedly to adapt to increasing density. This was (and is) managed demographically by nucleating condensation [Iberall and Wilkinson, 1985], by the creation of small very-high-density areas—villages, towns, cities, metropolises, megalopolises—within a generally lower-density "countryside," technologically by a continual process of innovation, and economically by the well-known ever-increasing division of labor and the somewhat more disputed hierarchical layering of command-control by states, markets, monopolies and cartels.

This entire process is often termed economic "growth" or "development." Complex system processes—energy flows, matter flows, action flows, for living systems demographic flows, for modern humans

economic-value-in-exchange flows—are bound in common and codependent. [Iberall, Hassler, Soodak, Wilkinson 2000] While there has been some genuine increment of per capita well being as a result of production growth (probably better measured by increase in human life expectancy than by the more elusive concept of increased “real income”), basically value-in-exchange per capita has merely been near-conserved, and human bionumber massively increased, probably by about six orders of magnitude, from an initial breeding pool of say 10,000. [Iberall and Wilkinson, 1984a, 1984b, 1985, 1987]

The longest-term globalization process has then had as its chief function the management of the increase of the packing density, and consequently the increase of “social pressure,” of a steadily more numerous human species within an essentially closed container. In some sense, the shorter-term globalization processes seem subservient to the longer process: they provide a widening of the division of labor and of command-control which allows the simultaneous survival of more and more humans.

As long as global population continues to increase, along with density and social pressure, it seems inevitable that other globalization processes, to the extent that they contribute to the slow increase of total global economic production (by increasing the division of labor and consolidation of management) will also continue. Even illegal immigration and earning a marginal living from illegal drugs are to be seen, in homeokinetic terms, as global-system adaptations to parochial antiglobalist oppositions, which have failed to comprehend the long-term demographic meaning of the processes whose local intrusions they hope to exclude.

Antiglobalization movements will merely serve to rechannel or at best ameliorate the globalization process, of which they are themselves a part, unless the demographic basis of contemporary globalization is directly addressed: human institutions are adapting in a large variety of ways, on an ever-larger spatial scale, as they have had to do for a very long time, to a persistently increasing size and density of the human population which persistently renders previous social adaptations obsolete. Although some of the multiform processes of globalization may be locally delayed or impeded, others will promptly substitute: humanity remains generally innovative, and not resigned to be pushed over the brink. There is no basis upon which to expect a general reversal of globalization without a previous decline of population and density, such as so far has proven either local or temporary or both.

No serious politician has as yet endorsed a program of recovery of local autonomy through conscious planning for local population decline. Localist demographic politics, where it exists, usually dictates a precisely opposite strategy, with the arguments pitting pronatalist nativists against liberal advocates of immigration. Even China's one-child policy (much resisted) is not intended to disconnect China from the global system; quite the reverse, in fact. The global "proletarian tide" of refugees from war, ecological disaster, brilliant central economic planning and mere resource-exhaustion poverty, would in any case doubtless restore any localized density reduction produced by self-restraint: Western Europe knows this already; Japan may discover it soon.

What is the long-term future of long-term globalization? Physical processes generally reach limits. Malthus may be redeemed at last: the world economy-ecology may finally adapt to population pressure by initiating a long cycle of global famines, epidemics and diasporas like that reported locally for Ethiopia. [Pankhurst 1986] Another possibility is, of course, a step-level crash, as with the Black Plague, perhaps as a result of a general failure of high-tech food production systems adapted to one climatic regime when another such regime is suddenly superimposed, or via a single epidemic (cf. AIDS in Africa). A third alternative requires limitless faith in human ingenuity: Fremlin's Gremlins. [Fremlin 1964] Sixty quadrillion human beings, stacked two thousand stories high and all living at the margin is sufficiently implausible; but humanity has already swollen by six levels of magnitude without self-annihilation, and another level or two at least might be aspired to by the true optimist.

Or of course we may discover that globalization is an inherently self-limiting process, and history may indeed decelerate to a happy ending. Complex living systems in general tend to conserve bionumber, i.e. maintain a roughly steady population. [Iberall and McCulloch, 1969] General material prosperity may lead to general reproductive self-restraint. Human demographic history seems to have proceeded somewhat differently: there always seems somewhere to be a "proletariat" in the original Roman sense, a class of people with no property but their progeny, whose "poverty in the midst of plenty" makes the incentives of prosperity meaningless for them. There is no warrant for anticipating an end to all the globalizations unless the problem of the marginalized populations is successfully addressed.

But is this possible? Homeokinetic social physics expects us to find

any complex system within a nested hierarchy of complex systems above and below, each maintaining itself at its proper timescale. [Wilkinson and Iberall, 1986] For instance, among social insects, the colonies (e.g. beehives) appear to be super-organisms which behave collectively even while their individual members decide, communicate and remember. At what level is rationality to be expected? Social insects have multiple levels of self-identity—individual, genome, colony—which cooperate and compete in maximizing their respective organismal, infraorganismal and supraorganismal interests (Queller and Strassman, 2002).

Some general findings of homeokinetics may be germane here. Humans can intermittently use rational study to govern decision-making. If a number of hierarchical levels compete for interest maximization, decision making at each level can be only weak rationality. Accordingly, a superorganism does not necessarily seek its own best interest in the most rational manner. There must be up-down disequilibrium processes, which are communicational. "People are entitled to seek dialogues with systems other than members of our species." [Iberall, 2000] Yet how can the bee communicate with the beehive?

Absent such communication, the social pressures stemming from a small net positive rate of change in Earth's human population are likely to go on driving social reconfiguration, as they have since the occupation of the human ecumene. By trade, diaspora, and command-control adaptations, at least some of the short-term globalization processes must be expected to continue, with, of course, associated social costs, and unremitting struggles to shift those costs. The question of which social reconfigurations might accommodate a small continual net population increase, with some balancing of the interests of individuals, classes (especially the marginalized), the species, and its genomes, will provide a great deal of food for thought for students of globalization broadly comprehended.

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