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Homogeneity, Heterogeneity, Pigs and Pandas in Human History

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Historians are curious creatures. We believe nowadays in the uniqueness of events, so much so that notions of regularity, pattern, and system have become inherently suspect. Sometimes efforts to see these in the human past are deemed evidence of some nefarious political inclination toward domination or imperialism. Thus we ordinarily leave the very big picture to others, such as journalists, sociologists, or even biologists such as Jared Diamond [6]. Their work offers a challenge from which historians usually shrink, although that charge cannot be leveled at David Christian [3] who has recently sought to find regular patterns not only in human history, but throughout the history of the Universe. In this chapter I offer two different attempts to identify big patterns, regularity, and system in human history. The first concerns a proposed pattern in the evolution of differentiation and integration in human culture, or, as I put it, using terms for the conditions rather than the processes, heterogeneity and homogeneity. The second considers analogies between animal species and human societies.

On Heterogeneity and Homogeneity

In the final pages of The Human Web [9] I briefly observed that human history seems to be a progression from simple sameness to heterogeneity to complex sameness. Here is a fuller version of that thought. Whenever it was that *Homo sapiens sapiens* first appeared (let us say 200,000 BP), our cultural diversity was minimal. Matters of diet, dress, belief, technology and so forth were (presumably) very similar because people were very few, they all lived in East Africa, and faced approximately the same set of ecological and social challenges. This remained the case for a long time, perhaps 100,000 years, although it is prudent to assume (and perhaps there is archeological evidence for this) some growing diversity among human groups as they spread into different parts of Africa.

With the exodus from Africa beginning roughly 100,000 BP,[1] the range of environments people inhabited, and adjusted to, grew faster: from Ice Age Siberia to southernmost Australia. Tool kits evolved and diverged; some people

[1] Some say 65,000 BP. Probably many groups made the trek at many times, and we shall never know just when.

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took to the sea; intertidal zones and fishing became important in places. Wide diversity emerged in diet and dress. Belief too: the emergence of human burials (which probably preceded the exodus from Africa) implies supernatural belief, and the range of burial practices (grave goods, body positioning etc.) suggests wide diversity. As people spread out over the earth, some of them, on the edges of the occupied zone, became isolated and more likely to pursue culturally eccentric practices. The original Tasmanians, for example, lost contact with all other humans when sea levels rose at the end of the last Ice Age. More recently, Easter Islanders apparently became cut off from the rest of humankind soon after their first arrival (perhaps AD 400) until Easter Sunday 1722, when a Dutch ship captain happened upon them.

Here one can draw a loose analogy here between cultures and biological species (something that should be done sparingly and carefully of course!). If sufficiently spread out spatially, over time species and cultures will both differentiate ("adaptive radiation"). If genuinely isolated from one another, they will do so faster. The exodus from Africa allowed cultures to spread out over all of Eurasia in short order, and to differentiate much more quickly than before, within Africa. (To stretch the analogy, what followed was like a Cambrian explosion in the cultural realm.) The founding populations of Australia, for example, who arrived perhaps 50,000 years ago, diversified so as to speak at least 300 languages as of about AD 1800. The initial occupation of the Americas, similarly, presented another opportunity for rapid differentiation. The first groups to cross Beringia (perhaps 15,000 BP, although all dates for this are controversial) were presumably similar to one another in culture, since they were all residents of eastern Siberia, a particularly challenging environment during the Ice Age that did not reward experimentation. But once in the Americas, these groups soon found a range of ecological niches, from tundra to moist tropical forest, and – rather quickly – adapted their ways so as to survive and often flourish in them all. Before European contact (AD 1492) Amerindians spoke well over 2,000 different languages [2]. This then amounted to another burst of adaptive radiation in the cultural realm.

The emergence of agriculture (~12,000BP to 4,000BP) in the long run may have led to a reduction of cultural diversity, but for several millennia it probably permitted an expansion. First, there were several independent transitions to agriculture, seven at least, on four different continents, all soon involving scores of different plants. Second, with agriculture human society acquired a new – initially rare and eccentric – way of life: farming. It took millennia before farming became the majority practice, and longer still until it became widespread over the earth; so for many thousands of years small groups of hunters and foragers remained (collectively) demographically dominant and comparatively unmolested except by one another. By the time farming did account for more than half of the human race (it is tough to date

this!) a whole new register of cultural diversity had emerged: varying political formats, from tribe to chiefdom to city-state and (perhaps) empire. Furthermore, the elaboration of religions and their rituals, with countless local deities and spirits manifested in particular trees, rocks or animals, meant that the first several millennia of farming life probably added to, rather than subtracted from, human cultural diversity.

Cultural diversification was sometimes bound up with genetic diversification of the human species. One illustration might help. The emergence of agriculture brought with it the domestication of animals, including at least in southwest Asia cattle, sheep and goats. This opened the door to several new ways of life, such as pastoralism and various mixes of farming and animal husbandry. At some point, perhaps as early as 9,000 years ago, some small subset of the human race evolved a genetic mutation that linked with a cultural mutation: they became milk drinkers in adulthood. Put another way, they became lactose tolerant, able to digest the most prominent sugar in milk. Most populations in the world cannot do this after early childhood because their bodies cease to produce the required enzymes. This had its metabolic logic in the absence of livestock: after weaning from mothers' milk, bodies that invested energy in producing the required enzymes wasted resources. But in the presence of livestock, the emergence of lactose tolerance proved an extraordinary advantage in Middle Eastern and northern European environments especially, and quickly became widespread in those regions. Where cold or aridity limited the prospects of farming but where grazing animals could still prosper – as in northern Europe and much of the Middle East – living off animals opened new opportunities, and living substantially off their milk and other dairy products (rather than killing them to eat their meat) provided abundant regular calories and protein. In northern Europe today some 90% of adults can drink milk. A different mutation occurred, somewhat later, among pastoralists in East and sahelian Africa, but with similar effect, allowing herder populations to acquire much of their calories and protein from cattle milk. The African version remains less widespread, meaning it is either more recent, or the selection pressure for this trait has been weaker, or both. These genetic changes, wherever and whenever they occurred, allowed further cultural diversification in diet and in the form of greater reliance in general on cattle [4, 11].

At some point, however, this process of cultural diversification, reversed itself. The interconnections among societies and cultures expanded, partly a result of higher population densities, better transport and communications technologies, and no doubt other things too. I would guess this turning point came somewhere between 1,000 BC (3,000 BP) and 1 AD. The reverse inaugurated a long, slow process of homogenization, in which farmers took over more and more ecosystems from non-farmers; people with states, formal militaries, and a complex division of labor within society took over peoples

without these things; a handful of religions acquired tens and ultimately hundreds of millions of followers, while most religions went extinct; the number of languages spoken began to decline, as forms of Chinese, Latin, Hindi and other "winner" languages absorbed speakers of thousands of now-forgotten tongues. Roughly the same thing happened with other aspects of culture: diet, dress, toolkit, family structures and a thousand other things. Empire-building was a big part of this process. But bigger still was the less-obvious expansion and intensification of networks of commercial, intellectual, ecological (and other) interaction [9].

A fine example of this cultural homogenization process is the long history of China. No one pretends of course that modern China is homogenized; it exhibits notable regional variation in diet, dress, religion, family structure and spoken language. But it exhibits much less such variation than did the peoples occupying the same space 3,500 years ago. That is because of the competitive success of an evolving cultural synthesis that we conveniently term "Chinese." It first took shape in the Bronze Age and was confined to a small region in the Yellow River (Huang He) Valley. It proved successful in at least two senses. First, the bearers of this culture created a series of militarily formidable states, notably the famous Chinese dynasties beginning with Shang (who ruled beginning around 1700 BC) and lasting until the end of the Qing (1911) or until today if one considers the Communist Party as another dynasty. These states forcefully expanded the sphere of Chinese culture by hundreds of conquests, large and small, the last of which was of Tibet in the 1950s. Tibet now includes far more Chinese speakers, Chinese styles of dress, Chinese food and so forth than it did in 1950, partly as a result of state policies intended to suppress Tibetan-ness. Simultaneously, however, over the same millennia, millions of people have voluntarily embraced Chinese culture, finding it attractive or advantageous. The precepts of Confucius, the yields of padi rice, and countless other components of Chinese culture held great charm for people whose ancestors may have been Yao or Manchu, but whose descendants are now Chinese. If current trends remain in place, it will soon be true of many Tibetans: they will be Chinese in culture, perhaps partly Chinese in ancestry, but living in Tibet.

That the Chinese cultural synthesis has evolved and is still evolving, so that little of the Shang remained in the Qing, let alone today, is of course true but beside the point: over 3,500 years the variety of human culture, at least if one measures this by language and religion, within what is now the Chinese state has drastically declined.[2] The process has been especially rapid in the past

[2] One might dispute this conclusion if one adopted different metrics of cultural variation, for example the number of types of cloth available, which is probably greater now than 1,000 or 3,500 years ago in China. But I think using language and religion as a shorthand for the broader category of culture is at least as good as any alternative.

1,000 years, and has intermittently been a component of state policy since at least the latter part of the Tang Dynasty if not before.

With the names, dates, and other details changed, one could easily offer similar stories of long-term (if of course incomplete) cultural homogenization in the Arab world over the past 1,350 years, the Russian or American over the last 350 years, or, on smaller scales, the Germanic realm, the Japanese archipelago, or Turkic Anatolia. All these cases involved military conquests but also voluntary cultural conversions.

Now, some caveats about this vision of history.

First, a caveat of global chronology. Not all these things happened on the same schedule. The process of homogenization had scarcely begun in North America before 1650 AD, whereas in China it was by then already well advanced. Moreover, within the broad category of culture, the turning points from heterogenization to homogenization no doubt occurred at different moments for religions, languages, and so forth. But I think if looking at the long sweep of time, one can still reduce all these manifestations of human culture to one curve, for heuristic purposes at least (see Fig. 1).

Second, a caveat of limits. It may be too soon to tell, but I imagine that the process of homogenization, or cultural globalization, has firm limits. Dress, for example, responds to local conditions: people in Scotland and Surinam will never dress just the same; their styles have probably converged as far as they can converge by now. Diet too, will always have local flavors, except for rich people who can eat food from anywhere. A certain amount of cultural heterogeneity is imposed by geography and climate. Beyond this effect, I wonder if there is not some additional irreducibility. Linguists think we have gone from perhaps 10-12 thousand languages to the current 6 or 7 thousand, and will likely be down to 3 thousand by A.D. 2100 [5, 8, 10]. Can we get to one language, as the author of Esperanto presumably hoped? Could religious homogenization go much further? It seems at present that the countervailing tendency – new sects, cults, religions hiving off from more established ones – is flourishing. Politically, the number of polities, once (estimated at) over 100,000 is now around 200, but that is more than existed in 1930. Are we as a species wired to prize difference so much that nationalisms, religious chauvinisms, and so forth will always ensure cultural diversity? In other words, Sicilians, Lombards, and Abruzzese can learn to be Italians after 1860 (Italian unification) and could conceivably learn to be Europeans after 1957 (the formation of the European Union's forebear), but cannot learn to be Eurasians (or whatever the next larger grouping could be). Or, in terms of probabilities, perhaps they can, but it remains implausible that everyone at any given time will surrender smaller identities for larger ones. (Absent threatening Martians to bring us together of course).

The historical record is full of eddies in the current, counter-examples of expanding cultural diversity in the era that I characterize as one of

homogenization. The Russifying Soviet Union broke up, unleashing a dozen nationalisms and expressions of defiantly non-Russian cultural self-assertion. Latin evolved into Rumanian, Italian, French, Spanish, Catalan, and Portuguese (and some smaller languages, or dialects as some would say, such as Provençal and Galego (Galician)). As long as such countervailing tendencies exist, it would probably require a very improbable political juggernaut to impose any global language or religion, let alone any global cultural synthesis.

Third, a caveat of parochial presentism. Perhaps in the fullness of time the trends I see, first of heterogenization and then homogenization, will look like swings of a pendulum. Each arrangement contains so many sources of dissatisfaction that it automatically creates pressures to reverse it, in the way that the political scientist Adam Watson [13] saw the history of international society swinging (slowly) between fragmentation and consolidation. When the international system was fragmented, that automatically created opportunities and pressures for consolidations via conquest; and when the international system was highly consolidated, in big empires and alliance systems, that condition automatically created opportunities and incentives for fragmentation via rebellions and defections. It seems to me likely that any particular set of arrangements will prove transitory, fleeting in the very long view, and within the very long-term trend of cultural homogenization that one should expect much back-and-forth. But full swings of the pendulum seem unlikely: as long as cheap energy and easy communications remain, no return to the degree of cultural diversity as of 1,000 BC or 1 AD seems at all plausible.

Perhaps allowance should be made for shocks, analogous to those seen in biological history, by which the process of and tendency towards speciation is occasionally catastrophically reversed by spasms of extinctions. In the realm of culture it could be the other way around: the process of homogenization occasionally interrupted by catastrophe that destroys our species' ability (for a while) to communicate and interact. In such moments, with human groups more isolated from one another, cultural speciation – spasms of diversification – would surely result.

In a slightly more complicated model, such shocks might initially produce a reduction in cultural diversity because, if serious enough, they would wipe out some cultures. But over a longer span their effect would be the reverse, due to isolation and attendant diversification.

Shocks of such magnitude have been vanishingly rare in the past. Perhaps the so-called Toba Catastrophe was one such event. Some 70-75,000 years ago a Sumatran volcano erupted, pulling a dust veil over much of the globe, and subjecting the planet to a "volcanic winter." According to one (not undisputed) view this drastically reduced the number of human beings to something under 20,000 worldwide. The evidence for this brush with extinction is genetic: the observable genetic diversity among humans combined with standard rates of mutation suggests such a small population some 70,000 years ago. If this

hypothesis is correct, it surely brought a sharp reduction in human cultural diversity, by wiping out entire groups, as well as the crash in total numbers [1]. But if the surviving humans lived in different parts of the world, their isolation would have been near total, and their tendency toward cultural differentiation thereby maximized. The Toba Catastrophe is hypothetical, and the evidence surrounding it too thin to sustain much in the way of conclusions.

In historical times, the two greatest human catastrophes were the 14th-century Black Death and the demographic disaster that befell Amerindians in the wake of Columbus. In the first case, pandemics, probably but not certainly of bubonic plague, killed off perhaps a third of the population of Eurasia in the century after 1348. Catastrophic as that was, it is impossible to see any clear increase or decrease in cultural diversity resulting from it. Within a century the fabric of communications, trade, and interaction had been knitted together again, so any increase in isolation among human groups following upon the pandemics lasted too briefly to matter in these terms.

The Amerindian population, which probably numbered something like 40-70 million in 1492, declined by as much as 90% over the next 150 years as a result of violence and especially of a series of epidemics. Amerindians had no prior experience of several highly infectious and dangerous diseases such as smallpox, influenza, whooping cough, mumps, and measles. Moreover, because they all were descendants of fairly small "founder" populations, migrants across Beringia at the end of the last Ice Age, their genetic diversity was (and is) very restricted. Thus any given infection successful in circumventing anyone's immune system was likely to circumvent everyone else's too. Some Amerindian peoples and cultures, especially in the Caribbean and eastern North America, disappeared altogether. Languages vanished. The reduction in cultural diversity occasioned by these disasters is not easily disentangled from subsequent effects of colonizations, expansions, and empire-building, on the part of Spaniards, Portuguese, English, French, Sioux and others. In any case, it seems that this particular shock did genuinely reduce cultural diversity in the Americas for several centuries.

Such examples, however, are too few to allow a confident assertion that the history of cultural homogeneity and heterogeneity resembles (or does not resemble) the model of biological evolution in which extinction spasms periodically prune back diversity, only to see it sprout anew. That idea, happily, remains hypothetical, with luck never to be properly tested.

Figure 1 sketches the suggested evolution of human cultural heterogeneity over the long haul. It is strictly heuristic. Culture cannot be reduced to a single variable on a y-axis. Thus there are no units. It proposes a slow expansion of cultural heterogeneity, accelerating when humans spread out over Eurasia; it supposes the Toba Catastrophe was real; it proposes a recovery of cultural diversity, slowly at first then faster – consistent with prevailing views about the

late Paleolithic – and faster still with the first transitions to agriculture; finally it proposes a sharp reduction in cultural diversity over the past 2,000 or 3,000 years.

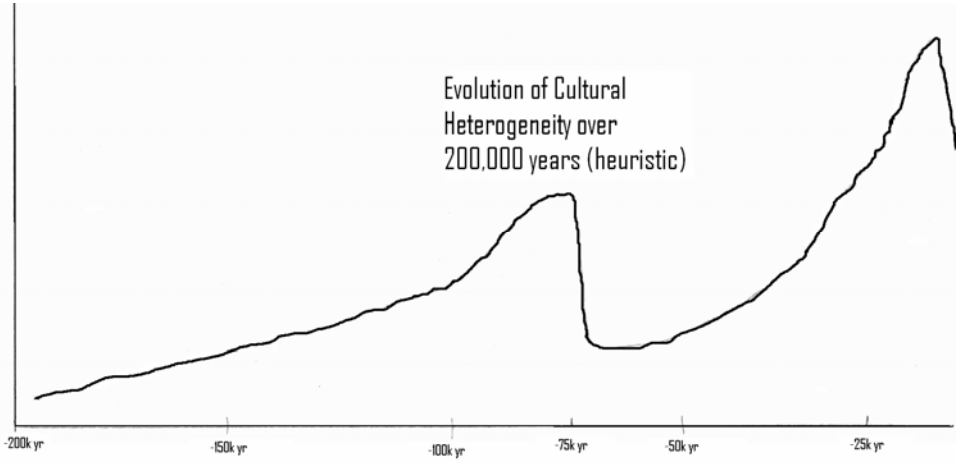

Figure 1. Evolution of human cultural heterogeneity over the long haul.

So, from a certain point of view, the long-term cultural evolution of humankind since its inception is one from homogeneity to heterogeneity to partial re-homogenization. But the character of human culture is spectacularly different now from 200,000 years ago: the partial re-homogenization not only is incomplete, and probably destined to remain incomplete, but it is also coalescing around an entirely different equilibrium. This quality I tried to capture at the outset, describing this part of the human cultural epic as an evolution from simple sameness to heterogeneity (of gradually growing complexity) to complex sameness. The homogeneity of human cultures 200,000 and 100,000 years ago consisted mainly in their simplicity. They all had similar technologies because they had so little. Today the convergence (far from full) centers around urban, high-energy, societies with steep social hierarchies and tremendously complex socio-economic structures and technologies.

Finally, one might also imagine parallel evolutions of heterogenization and homogenizations in the pathogens and parasites that have colonized the human species. At the dawn of human time, these presumably were much the same because humans were few in number and all lived together, and all in the same environment and thus exposed to the same microbes, worms, and so

forth. But over the millennia, as human population grew, as people moved to new environments, and rubbed shoulders with a greater variety of other denizens of the biosphere, the pathogen and parasite load of the human species diversified greatly. Some people carried malarial plasmodia and others did not. Some carried tuberculosis mycobacteria, others not. One of the effects of globalization in recent millennia, and especially in recent centuries, has been the sharing of our collective pathogen load, the (partial) homogenization of it – a brutal experience for billions of people. This process too has shaped our history.

Of Pigs and Pandas

The second issue concerns a broad analogy between societies and species in reference to their adaptability. Some anthropologist whom I read a quarter century ago [12] once wrote that a pig cannot in a crisis become a giraffe, but societies can (I probably have the specific animals wrong here). They can, and often they do. But sometimes societies cannot reconfigure themselves so as to weather a crisis; they crumble and disappear instead. They fail to adapt to rapidly changing circumstances.

Some animals, pigs, for example, but also rats, humans, cockroaches, are famously versatile, able to flourish in a wide range of circumstances. Others – pandas, koalas, sharks – are very fussy, supremely adapted to one set of conditions and highly successful (in terms of survival and reproduction) while and where those conditions last, but vulnerable should they change (as they are changing for pandas).

Are societies and states like this too?[3] Are some social formats flexible and adaptable to changing conditions, while others are instead supremely adapted to specific conditions? Are the flexible and adaptable (I shall resist the temptation to call them capitalist pigs) at a comparative disadvantage, vis-à-vis the pandas, during times of stable conditions? Or perhaps in human affairs conditions have never been stable enough, and pig-type societies always had an edge, making this moot?

In addressing these questions I will begin with what I call a social format. This is not a specific society or state; it is a set of social and political arrangements characteristic of many societies or states. For example, we can detect a panda-type social format, supremely adapted to the circumstances of foraging and hunting societies: the band of 30-80 kin. Other arrangements no doubt were tried now and again during the Paleolithic, but apparently worked

[3] I am aware there have been many attempts to draw analogies based on Darwinian precepts that have been intellectually and morally dubious, and contributed to political misfortunes such as Nazi genocidal programs. Perhaps there are babies amid the bathwater, however.

less well; like harmful genetic mutations they did not last. All available evidence suggests that this format evolved early in human history and lasted for some 190,000 years (assuming humans became humans 200,000 years ago). Specific bands of course came and went; some lasted for generation after generation, due to luck or skill, while others were wiped out by violence, starvation, or some other calamity. Larger social groups tended to fragment, due either to disharmony within a group or localized food shortages or both. Smaller groups tended to amalgamate (or go extinct), perhaps for reasons of self-defense against rivals, or in order to have enough good hunters to form a team that could cope with big game. Although these bands no doubt assimilated non-kin frequently, kinship (real or fictive) surely conferred an advantage in the form of group solidarity and willingness to cooperate in the interest of all. Such arrangements lasted so long because they answered the challenges of hunting and foraging in an uncrowded world.

The small band format did not answer well to the conditions of agrarian life. So with the transitions to agriculture, new social formats arose. Presumably experimentation, trial, and error selected for the winners. Larger groups became more practical when and where mobility decreased. Defense against rivals, imperative in a sedentary world where fleeing meant loss of almost everything, increasingly favored bigger groups. Tribes emerged, and chiefdoms too, and probably some other arrangements that left no trace so we have no concept of them. Gradually, agrarian conditions gave rise to a different panda (perhaps we should call it a koala), the sedentary, territorial state, which originated about 5,500 years ago in Mesopotamia. This social format proved supremely adapted to the tasks of survival and reproduction among farming peoples. As farming spread, such states became routine, and hunting-foraging as a way of life was slowly shunted into mountains, deserts, and rain forests, the small band social format became rare and now is perhaps approaching extinction.

The rise of the sedentary state was surely no accident. It happened in several settings where farming took root. Even if one supposes that it diffused from a single example in the entire Afro-Eurasian landmass (unlikely in my view), there can be no doubt that it arose in the Americas quite independently. Indeed it took roughly the same shape in the Americas as in the main population centers of Afro-Eurasia (Egypt, Mesopotamia, north India, and north China). Religious and military specialists shared the topmost rungs of the social order, supported by tax and tribute provided by large peasant majorities. This socio-political order proved very durable. Despite all the upheavals, wars, revolutions, pandemics, droughts, famines, climate swings and so forth, it remained the standard format from ancient times until the twentieth century. The Ottoman Empire, which lasted until 1923, was a perfect example. So was the Romanov state in Russia (which ended in 1917) and the Mughal Empire in India (1858). The Qing Empire in China (which ended in

1911), was a less perfect example, because scholar-bureaucrats shared the top rungs with military specialists, and their authority came only partly from expertise in religious matters. In the pre-Columbian Americas, the Inka and Aztec states, to take the best-documented examples, conformed strongly to this general pattern.

Naturally the Ottoman state was not identical to the Romanov, let alone to the Aztec or those of ancient Mesopotamia or Mesoamerica. Indeed the Ottoman state of 1900 was quite different from that of 1500. Seen close up, in the manner that historians prefer, one is overwhelmed by difference. Seen from afar, all these states, and the societies that underlay them, shared basic features: agrarian production by a toiling peasantry comprising 85-95% of the population; modest urban classes but usually some merchant elite; a topmost class clustered around the alliance between military and religious institutions; and a hereditary monarch perched precariously above all else. These arrangements may appear to the modern eye as unjust, exploitative, and immoral. But they seemed to have been the default setting for farming peoples almost everywhere. Nothing else commanded anywhere near the same following in terms of human numbers during the 40 centuries before 1900 AD, although a small minority of farming peoples lives in acephalous or stateless societies, most famously perhaps the precolonial Igbo of West Africa.

The entrenched inequalities characteristic of life in sedentary, territorial states selected for ethical-religious-philosophical systems such as Buddhism and Christianity which promise rewards to the meek in the future; such as Confucianism which emphasizes duty and role; and Islam, which does all of the above. Without these cultural justifications for inequality, it apparently was hard to sustain such a state and society. The sedentary, territorial state, then, was a social format firmly supported by intellectual and ethical edifices, and well calibrated for the conditions of agrarian life.

Those conditions altered suddenly in the nineteenth and especially the twentieth century. Fossil fuels and industrial production methods revolutionized economic and demographic systems. The rural village, which had been the habitat for the majority of humans for perhaps 4,000 years, gradually became the minority experience. Cities grew, so that by the end of the twentieth century more than half of humankind lived urban lives. After 1850, the biggest agrarian states crumbled, thanks to the pressures of imperialism undertaken by rapidly industrializing states in northwestern Europe and Japan, and to the forces of internal peasant revolution. The durable cultural systems of ethical justification for inequality quickly lost their legitimacy for millions, who turned elsewhere – Marxism, nationalism, Taiping Christianity[4] – in their efforts to make ethical sense of the world. While much

[4] In China between 1850 and 1864 a giant rebellion shook the Qing state. The Taipings, as they are called, repudiated existing arrangements, politics, and morality, in favor of a

of the world's population still lives in rural villages today, especially in South Asia and in Africa, the urban, electrified, high-energy way of life has spread and continues to spread very quickly and very widely.

It is still too soon to know whether a new socio-political format will succeed in dominating the post-agrarian age. Should socio-economic conditions stabilize around a new way of life, one might expect a new and stable social format. Of late some have supposed that the more-or-less democratic nation-state has gained traction and will inexorably sweep the field [7]. Allegedly an innate human quest for freedom assures the appeal of such polities, and thus to an "end of history." But there is no necessary reason why the future should in this respect resemble the past (pace Thucydides) and societies settle on a preferred social format. The hunting/foraging way of life and the agrarian way of life could well be the only stable patterns in the human career on earth. If the instabilities of the past 150-200 years last indefinitely into the future, we surely should not expect any single social format to endure, unless there is a pig-like one, adaptable to a wide set of circumstances.

So much for social formats. What about specific societies and states? Is it useful to understand them as having pig-like or panda-like qualities? Why has Switzerland proved durable over tumultuous centuries of European history (despite its ethnic and religious divisions) and Yugoslavia or Czechoslovakia not? Is it chance (e.g., not being overrun by invaders) or adaptability? Why has Armenian identity, and Armenian society (and periodically an Armenian state) survived despite being overrun frequently by invaders and empire-builders, while scores of other peoples, identities, state of eastern Anatolia and the trans-Caucasus were swept into the dustbin of history? Is that chance? Or over the last 2,500 years have Armenians (and Armenian-ness) somehow been more pig-like and less panda-like than their erstwhile neighbors?

Here the time-scales are much briefer. No single state anywhere has lasted more than a dozen centuries, although if one counts successive dynasties in China or Egypt one can extend the time-scale to a few millennia. Most states last far less than that. The variation is tremendous. Some of the difference in durability surely comes down to chance. A battle lost, a string of droughts, a few epidemics — any of these could bring down a state and even put an end to a society. Some (but not much) of the difference in state life expectancy is perhaps explained by geography. Island states (and societies) such as Iceland or Japan may well be more likely to endure because they are subject to fewer blows from neighbors. But the long history of unstable states and conflict before the formation of a unified Japanese state by the Tokugawa, or the long travails that preceded the creation of a unified Great Britain, and the violent and exciting histories of, say Sri Lanka, Ireland, or Java warn against any

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more egalitarian creed based loosely on Christianity as transmitted by an American missionary to a visionary Chinese, Hong Xiuquan.

strong assertion of an association between island geography and state durability.

While there may well be other variables to consider in explaining the differential durability of states, I think there is a sizeable residual in the form of the internal characteristics of their societies — that is their adaptability. That characteristic, of course, consists of many parts. One part, for example, is the ability to assimilate, absorb, and tolerate immigrants. To use some contemporary examples, Brazil does this with comparative ease. Japan does not. Japan's longstanding emphasis on Japanese-ness served it well in some circumstances, but in a globalizing world with mass migration it augurs poorly. Moreover, for aging societies likely to suffer labor shortages, trouble absorbing immigrants is a tremendous economic handicap. It may well be that Brazil's comparative success in absorbing newcomers (including several hundred thousand Japanese beginning in 1908) depended and depends on a weak sense of Brazilian-ness, which in some situations could prove a handicap, even a threat to the survival of the state. But to date it has not.

Another part of pig-like adaptability might be flexibility with respect to ideology: if the People's Republic of China outlives the three-score-and-ten lifespan of the Soviet Union, surely one of the key reasons will be its more adaptable version of communism, which by the mid-1980s, let alone by 2009, bore scant resemblance to the Maoism of the 1950s. Chinese communism seems capable of becoming a version of authoritarian state capitalism. But it is too soon to tell: the People's Republic is now only a bit more than 60 years old.

Surely, as among pigs, adaptability among states and societies consists of many, many traits. The collection of traits that make a given society and its state pig-like need not be stable over time. A pig-like society, in a crisis, may change many of its features, and emerge from the crisis quite different, but still highly adaptable (a pig becoming a cockroach if you will). Indeed, if granted decades or centuries of stable conditions, a pig-like society might quietly become panda-like. Indeed I would expect this to be the norm. Rather less likely, but not impossible perhaps, a panda-like society could in a crisis reconstitute itself as a pig-like one.

One could extend this elementary Darwinian perspective more broadly to specific facets of human organization and culture. All are subject to "selection" pressures and some survive and others don't. There is surely some randomness in all this, but perhaps there is some system too. For example, when it comes to languages, there is probably nothing inherent in any of the human languages that changes their probabilities of survival or extinction.[5] Their fates

[5] Although if it is true, as sometimes reported, that some Amerindian languages of South America either have no words for numbers, or only words for one, two and more than two, my statement might require modification. If a language's vocabulary genuinely meant an inability to report to one's village the distinction between one canoe

rest entirely on the characteristics – and fates -- of the societies which speak them.

However, when it comes to religions, I would say the opposite is true: some religions are more flexible and adaptable, and more likely to survive changing conditions, than others. A certain vagueness (extending to self-contradiction) allowing a vast range of interpretations, is a useful survival trait for religions to have. Those religions too bound up in specific animals, trees, rocks, had (and have) poorer survival chances as their followers might have to move, the animals might go extinct, etc. Other religions, too morally stringent and consistent (Shakers, perhaps), mark themselves for extinction in changing times.[6]

Conclusion

In any case, thinking about societies and states with a basic model of Darwinian selection in mind, opens up new ways of understanding history, especially but not exclusively political history. It invites new – for historians -- sorts of categories based on variables, such as adaptability, that are not often featured in social science and almost never in the work of historians. Historians are by training predisposed to prefer understandings of the past not based on any specific models, however informal; by education usually incapable of entering into dialogue with the natural sciences; and by virtue of their knowledge of misbegotten precedents such as Nazi racial ideology especially suspicious of concepts imported from biology. So only a few renegade historians are likely to join in the quest to construct understandings of the past, and of the dynamics of socio-cultural evolution, that involve explicit use of systemic thinking. But, just as historians should no longer shy away from social thought built around concepts from biology, systems thinkers interested in social dynamics should cultivate their appreciation for the unsystemic, particularistic portraits of the past drawn by historians—because history is full of disorder, randomness, and chaos, as well as a goodly quotient of system.

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of approaching attackers and twenty canoes, this would seem to raise the odds of a language's extinction.

[6] The Shakers, formally the United Society of Believers in Christ's Second Appearing, once numbered several thousand in the U.S., but their firm commitment to sexual abstinence meant their recruitment relied on voluntary conversion and frequent adoption from orphanages. When U.S. orphanages gradually ceased to provide them with children, the Shakers declined in number and today are on the precipice of extinction with a total population of three, in Maine. The Shakers remained true to their principles in a changing world at the cost of self-annihilation.

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