# Migration in World History

Patrick Manning, in Elli Heikkilä, ed., *In Which Direction is Finland Evolving? The Dynamics of Mobility and Migration*, 18–39 (Turku, FI: Migration Institute of Finland, 2020).

## Prologue

This overview of human migration presents the main practices of migration, their development over time, and their consequences. I presented this article as a plenary lecture to the Migration Institute of Finland in 2019. It gives a summary of 20 years of my thinking on the nature and significance of human migration.

My first exploration of early human migration relied on a distinguished survey of migration across the animal world, by Hugh Dingle. In 2006 I published two articles—one on the character of human migration , showing that human migration differs from that of other species because of language; the other interpreting human migration as seen through language distribution. I also rely on the advances by Jan and Leo Lucassen on quantification of migration in recent centuries.

## Essay

**Migration Across the Millennia**

This article is to consider the history of migration in broad scope. By broad scope, I mean that the study of migration goes back to very early times, to the traditions and myths of origin of each people. Yet migration is also a recent discipline, as European scholars began to study urbanization and overseas migration in the nineteenth century. Today, with expanded disciplines of the social sciences, humanities, and natural sciences, we can explore the whole of the human experience through study of migration, reaching across time and space. To address this wide range of issues, I begin with a qualitative discussion of the main flows of human migration and changing migratory influences on social structures. Then I offer suggestions on how best to quantify and analyze flows of migration. I conclude by reviewing the functions of migration in society, adding projections of future migration.

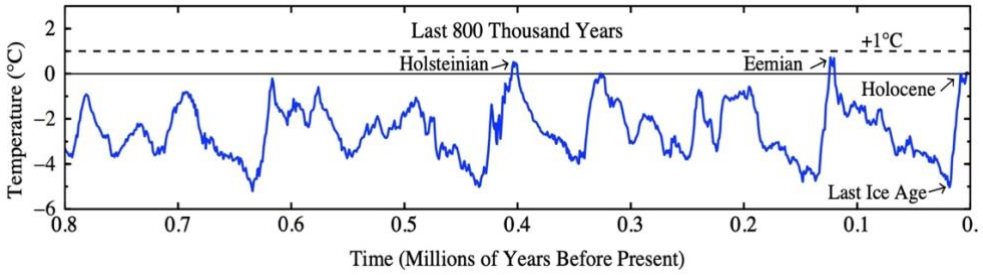
Long ago, in the early Pleistocene epoch, the hominid predecessors of *Homo sapiens* expanded across Africa and into Eurasia, in gradual migrations that were similar to those of other large mammals. I begin with *Homo erectus*, an early ancestor who existed from 2 million years ago, declining after 500,000 years ago. This species is known from skulls, skeletons, and characteristic Acheulian hand axes—in Africa, Europe, southern Asia, and as far east as Java and Beijing. Its body was hardly distinguishable from our own; its cranial capacity averaged 900 cc, two thirds that of humans today; its teeth were larger than ours.

It is now known, based on geological analysis since 1950, that the world of *Homo erectus* was governed by climatic fluctuations. The Earth has undergone several million years of cycles of just over 100,000 years: long periods of cooling concluded with great expanses of glaciation, followed by short periods of rapid warming, as shown for the past eight cycles in Figure 1. The fluctuations in average global temperature were of 10 ºC from top to bottom, resulting especially as the Earth's changing orbit brought varying intensity of solar energy. *Homo erectus* survived, expanded and declined in response to fluctuating climate, eventually giving way to succeeding species.

In the nineteenth-century discoveries of hominid remains, *Neanderthals* and *Homo heidelbergensis* became known in Europe. From the first, the field of paleontology focused on the issue of brain capacity. But only in the twenty-first century did a fuller chronology become clear: *Heidelbergensis* emerged in Africa some 600,000 years ago, in

Europe and West Asia; Denisovans in eastern and southern Asia somewhat later, and *Homo sapiens* in Africa by 300,000 years ago.

Figure 1. Average temperatures over 800,000 years. Source: Hansen & Sato (2011).




Beyond phenotype and brain size, research since 1980 has revealed complexity in the evolution of *Homo sapiens*. Genetic analysis began with analysis of mitochondria, tracing female ancestry to show that *Homo sapiens* arose in Africa before 200,000 years ago; Y-chromosome analysis traced somewhat earlier male ancestry in Africa (Cann, Stoneking & Wilson 1987). The new field of "cultural evolution" focused on processes of learning in *Homo sapiens*, showing how practice and imitation were exchanged and recorded in the brain, combined with genetic tendencies toward collaboration. Parallel research traced gestures for communication, elements of language, and the nature of emotions.[1] These discoveries of successive developments in *Homo sapiens* contributed to the understanding of big changes to come.

**Pleistocene Innovations in Migration**

A great social change arose with the emergence of spoken language in Northeast Africa some 70,000 years ago.[2] Speech brought an expanded social order in this Homeland, leading to rapid migration and settlement in increasingly varied habitats. While details of the emergence of spoken language emerged are not confirmed, I argue that syntactical language began in the interaction of children, playing with communication and forming communities of discourse. A community of about 150 speakers then arose to sustain the vocabulary and especially the syntax of a language. This speaking community became the first social institution: communities and their languages expanded, divided, and spread with time (Manning 2020, 37–43).[3]

The exchange of young migrants across communities—what I call "cross-community migration"—was an additional social institution of the new community of speaking humans. This became the basic model of human migration, supplementing earlier, simple colonization of new lands. Young adult migrants moved to new communities, where they had to learn new language and customs, thus facilitating exchange of knowledge, genetic exchange, and creation of networks linking communities through speech (Manning 2006; Manning 2020, 56). With this additional institution, human migration now became distinctive from that of other mammals.

In the Homeland and then further afield within Africa, the large communities of speaking *Homo sapiens* encountered hominids who lived in groups of perhaps 30 and did not speak. From genetic evidence we know that there was interbreeding among communities: this tendency to interbreed across communities can be seen as an inherent quality, a migratory instinct within humans. Those who joined the speaking community as adults therefore had thick accents, weak syntax, or spoke creole and pidgin versions of early language. The spread of speaking humans from the Homeland—southward and westward throughout the African continent, absorbing

[1] On cultural evolution, see Boyd & Richerson (2005); on language, see Berwick & Chomsky (2016); and Fitch (2010).

[2] The Homeland included modern Ethiopia, Kenya, and Tanzania.

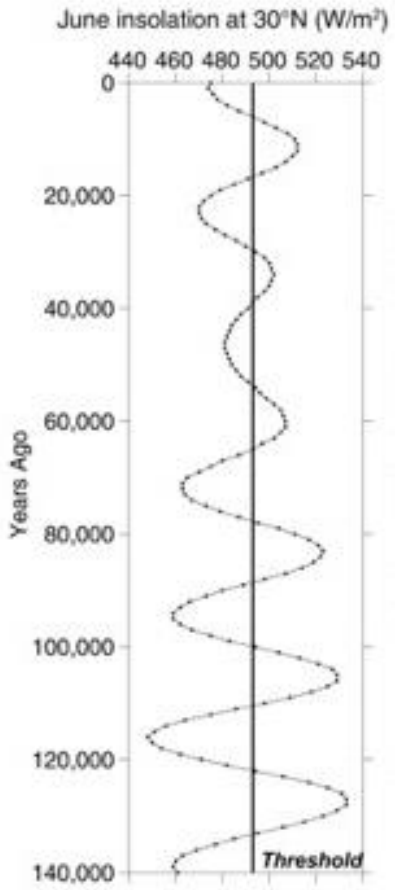
[3] Languages changed inherently over time in lexicon, syntax, and phonology.

other hominid communities—is documented in analyses of archaeology and languages (Ehret 2015). Speaking *Homo sapiens* transformed their own social order and, eventually, transformed the Earth's ecology.

At the same time as speaking humans spread south and west throughout Africa, related groups migrated eastward, from 60,000 to 25,000 years ago, initially settling tropical Asia and later occupying temperate Eurasia. Geneticists now argue that there was a single migration from Africa into Asia, and that all populations outside of Africa descend from this initial migration (López et al. 2015).[4] By the same logic, a single African language was ancestral to all the languages spoken outside the continent. Nilo-Saharan languages are of particular interest: they may be seen as descended within Africa from the languages that also moved eastward.[5]

Through analysis of archaeological sites and surviving language groups, we can argue that humans moved eastward across the consistent tropical ecology of the Indian Ocean shore, reaching Sahul (now Australia and New Guinea) by 50,000 years ago (O'Connell et al. 2018). Boats were likely significant throughout human expansion along the Indian Ocean littoral: they were definitely needed for the initial crossing of the Red Sea to Arabia and to cross open-water stretches of 60–100 km to reach Sahul.

Figure 2. Northern hemispheric insolation. Source: A. Hillman in Manning & Hillman (2013).




[4] For an authoritative overview of recent historical analysis through whole-genome analysis, see Reich (2018).

[5] For Nilo-Saharan languages and for a comprehensive review of human migration as seen through the distribution of language groups, see "Language Resources", www.cambridge.org/Humanity, 3.Nilo-Saharan.

The next stage of migration—northward into temperate Eurasia—was no easy matter. The era from 50,000 to 40,000 years ago was exceptionally cold and dry, so that the Sahara, Arabia and regions north of them were virtually impassable. Figure 2 shows the periodic fluctuations in the force of insolation at 30 degrees north latitude, indicating the alternations between greenery and desert (at high and low insolation, respectively) that made migration either feasible or difficult.[6] As warmth and humidity began to return, 45,000 years ago, the easiest route north was along the foothills just west of the Himalayas. Migrants who reached the grassy steppes, once they adjusted to the habitat, found ample game for hunting plus temperate fruits and vegetables.

Across the steppes toward the west, the Caucasus appears from language evidence to have been a key region of human settlement. From there, migrants moved to the Black Sea and on to Mediterranean lands and the Danube Valley. These settlers, known as Cro-Magnon in the terminology of early paleontologists, arrived roughly 45,000 years ago. At much the same time, migrants also moved eastward along the steppes, eventually arriving in the forested Amur Valley, from which the Eurasiatic languages arose roughly 30,000 years ago.

Humans of this era, living as foragers, extended their basic model of migration with networks at two levels. Among nearby communities, cross-community migration and periodic gatherings sustained local networks, sharing knowledge on each new habitat and speeding the colonization of additional lands. Further, broader networks linked localized communities into continental webs. The effectiveness of broad networks is attested by the exchange of technical advances over great distances; parallel exchanges spread archery, atlatls (throwing sticks), sewing and weaving. Dogs, who joined human societies some 30,000 years ago, most likely in northeast Asia, spread to communities on every continent.

Sophisticated skills in representation, in the hands of these speaking humans, are tangibly documented through extraordinary visual portrayals. Dated as early as 44,000 years ago, these works survive as cave paintings in Southeast Asia, Europe, and India; rock paintings in Africa and Australia; and ivory sculptures in Siberia.[7] Such representations, apparently universal among humans, appear to have arisen from the inherent logic of speaking communities, though they surely benefited as well from exchange among networks. Overall, these works confirm the impressive early advances in human intellectual, cultural, technical, and migratory advance.

The last few millennia of the Pleistocene epoch, from 25,000 to 12,000 years ago, brought extraordinary climate shifts, provoking fundamental changes in human life and new migration patterns. Temperature reached its low point 21,500 years ago, by which time great glacial sheets had spread over polar regions (see Figure 1). The Last Glacial Maximum caused all species to retreat, seeking lower latitudes and lower altitudes. In contrast, for the succeeding 10,000 years, average temperature rose at the rate of 1 °C per millennium, while sea level rose at the rate of 10 meters per millennium. Overall, humans responded with widespread experimentation resulting in two main types of social change. First, communities adjusted their model of migration, adding consolidation to their previous pattern of dispersal: existing communities of 150 combined to form confederations of roughly 500 members, creating a governance structure to coordinate their new and more complex activities. Second, within confederations, humans turned to the development of productive techniques—construction of shelter, intensive gathering of grains and other vegetable materials, and creation of textiles and ceramics through the organization of workshops to rely on collaboration in production.

[6] Figure 2 indicates the degree of insolation (and hence temperature and humidity). It shows the varying levels of insolation as language emerged (70,000 years ago), tropical migration began (65,000 years ago), temperate migration began (45,000 years ago), the Glacial Maximum (21,000 years ago), and the beginning of the Holocene (11,000 years ago).

[7] The team led by Maxime Aubert documented an image of a small bovine, painted on a cave wall in Borneo over 40,000 years ago, then found a full hunting scene is a Sulawesi care, dated to 44,000 years ago (Aubert et al. 2019).

Settlement of new lands continued, especially with the terminal Pleistocene rise in temperature and humidity. Despite the great Laurentide ice sheet separating North American and Asian lands, two groups of settlers were able to move from Siberia to the Americas. In each case, voyagers from Northeastern Asia, relying on types of boats that are unknown in detail but may have been skin boats, followed the Pacific currents and the "kelp highway", the offshore collection of kelp, fish, birds, and maritime mammals that provided food for maritime voyagers. The initial group settled in the Salish Sea at the mouth of the Fraser River. In this homeland, the Amerind languages took form. Some of these settlers moved rapidly inland to settle North America. Others moved even more rapidly by sea along the Pacific coast, forming settlements and Amerind-language subgroups in what are now California, Mexico, Colombia, Peru, and Chile—reaching the settlement known as Monte Verde in Chile at a time now dated to 18,500 years ago. Genetic and linguistic data confirm each other on this interpretation (Manning 2020, 95 – 100; Scheib et al. 2018). A second group of migrants, now known as speakers of Na-Dene languages, settled to the north of their predecessors, roughly 17,000 years ago, and expanded north along the coast and then into the Yukon and Mackenzie Valleys as the ice sheet receded.

The final great shock of the Pleistocene epoch was the Younger Dryas, a sudden and severe cooling from 12,800 to 11,600 years ago, named after the subarctic flowers that thrived during its cold spell.[8] North American temperatures declined by 10 ºC within a decade and then, a millennium later, rose by 10 ºC at the same rapid pace. Perhaps the crisis resulted from shifts in glaciers and oceanic currents along with warming; maybe it was from extra-terrestrial impact, of which we have a candidate in the Greenland crater recently discovered but not yet dated. This same moment brought extinction of the megafauna of the Americas (Kjaer 2018; MacPhee 2018).

The first global consequence of human migration was the human imprint on global habitat. In the late Pleistocene, speaking humans settled the continents and seized a place at the top of the food chain. Our ancestors, an invasive species, modified the habitat of the many localities in which they settled, shifting the balance among other species and laying the groundwork for further migrations. The expansion of our species, within 50,000 years, included absorption of competing hominid species, advances in technology, adaptation to new habitats, and innovations in representation, all relying on the constructed social institutions of spoken language, community, and cross-community migration. Migration, relying on high levels of intercommunication, maintained local communities and colonized new lands, sustaining regional networks and long-distance exchange. This sudden expansion and its reliance on speech tends to confirm the hypothesis that spoken language and cross-community migration emerged together, roughly 70,000 years ago.

**Variations in Holocene Migration**

The Holocene epoch, opening 12,000 years ago and continuing until the recent past, brought change upon change, magnifying human leadership in the animal kingdom and developing additional patterns of migration. Humans developed productive skills that gave them increasing independence from the natural world. The results of Holocene-era expansion were both positive and negative: human society now exploited the Earth with an intensity sufficient to bring about climate change.

Holocene variations in the basic model of migration amplified both dispersion and consolidation of populations. Dispersion brought settlement of additional habitats; consolidation brought exploitation of existing habitats with denser populations. In a genuinely new variation on migration, vertical migration arose to enable the creation of social hierarchies. During the 12,000 years of the Holocene, these further variations on cross-community migration facilitated institutional and technological innovation, creation of new networks of dispersion and consolidation, and population growth. Human societies became increasingly influential in the earthly environment, yielding major

[8] The flowering *Dryas octopetala* expands in times of sudden cold. Three succeeding periods of cooling were the Oldest Dryas (15,070–14,670 years ago), Older Dryas (ca. 14,000–ca. 13,800 years ago), and Younger Dryas (12,800–11,600 years ago). Specific dates were confirmed when radiocarbon dating became available.

modifications in climate, disease, and society itself. Ultimately, in the concluding millennium of the Holocene, one more variation in migration arose with the emergence of worldwide migratory connections.

In dispersion, the continued warming of the early Holocene reinforced the spread of migrants across distances. In West Asia, speakers of Afroasiatic languages moved from the Nile Valley to all of Northern Africa, the Levant, and Arabia; in East Asia, speakers of Chinese languages moved from southwest highlands to the northeast of today's China (Manning 2020, 93–98). In the Americas, migrants moved eastward in South America and from North America into Meso-America.

In consolidation, the social organization of the Holocene epoch confirmed the concentration of migrants by creating societies of 1,000 or more members which formed by consolidation of six or more of the earlier communities. Formation of Holocene societies expanded the size of language groups, reinforcing social diversity and division of labor yet sharing an identity that we can call ethnicity. As the Holocene proceeded, agriculture arose in key centers—in Asia, New Guinea, Africa, and South America—and then spread within those regions. Initial crops included wheat, barley, rice, millet, sorghum, taro, and yams; domesticated animals included donkeys, goats, sheep, cattle, pigs, and chickens. Towns formed, reaching populations of 10,000.

Dispersion and consolidation in migration, in the mid-Holocene era, brought a second wave of global migratory consequences. That is, migration and expanded agriculture brought stable climate from the mid-Holocene to the Anthropocene. Climate stability, in turn, encouraged further settlement and social expansion. The multi-pronged argument of geologist William Ruddiman (Ruddiman 2014) is central to this analysis. He began by noting that the post-Ice Age peak in insolation and temperature, 10,000 years ago, was followed by a decline in temperature and in atmospheric carbon dioxide and methane, as in the previous glacial cycles of climate. But in the most recent glacial cycle, the decline in carbon dioxide reversed and began a rapid rise from about 6,000 years ago. Ruddiman showed that human clearing of forest and brush for farming, in many parts of the world, reduced the absorption of carbon dioxide by plant life and also increased Earth's reflectivity. These combined factors caused atmospheric carbon dioxide concentration to increase, preventing solar energy from escaping the earth and raising temperatures. In parallel, methane gas, arising from chemical change in wetlands and later from the burping and flatulence of numerous grass-eating large animals, is even more efficient in increasing temperature. Methane concentration, initially declining after the peak in insolation, began to increase 4,000 years ago, reinforcing temperature rise. Ruddiman's explanation was that growing numbers of oxen, cattle, and water buffalo, pulling ploughs in farming—reinforced by the rise of equine culture—combined to expand atmospheric methane 4,000 years ago (Ruddiman 2014, 19–42).

The overall result, confirmed in recent analysis, was that the Earth's natural temperature decline was cancelled out by human creation of greenhouse gases, initially through forest clearing, then by intensive cultivation aided by animals (Vavrus et al. 2018). As a result, temperature from 6,000 years ago until the twentieth century maintained a stability that was virtually unprecedented in climate history. This era of Holocene climatic stability, resulting from migration, towns, and agriculture, provided the basis on which human society and economy expanded and evolved dramatically.

In the late-Holocene epoch, 5,000 years ago to 1,000 years ago, social hierarchy added vertical networks to the horizontal networks of dispersion and consolidation: states, warfare and empires expanded along with agricultural and urban societies (Ruddiman 2014, 1–4, 19–42).[9] This was the era of early cities in Mesopotamia, the Nile, and Yellow River Valley. The Achaemenid state of Persia launched the first large empire in 550 BCE (2,500 years ago), after which empires replaced each other until the twentieth century. Reliance on domestic animals, especially in the Old World, provided societies with food, motive force, fibers, and skins: horses expanded the scale of war and of enslavement. Technical and social innovations brought metals, water supply, and literacy. At the same time,

[9] On initiatives to create social hierarchy and the actions by which hierarchy was long resisted, see Flannery & Marcus (2012).

farming populations dispersed in many directions: Indo-European-speakers settled and opened farms in Europe and South Asia, as did Austronesians in island Southeast Asia, Bantu-speakers in the southern third of Africa, and farmers in North and South America. Fluctuations in climate, disease, and hierarchy continued in rural and urban societies.

The terminal Holocene epoch—the thousand years from 800 CE to 1800 CE—brought a third wave of global migratory consequences. Expansion in military conflict combined with a revised migratory model that achieved global interconnection. These human factors combined with epidemic disease to cause population decline and global cooling. This "Era of Collisions", as I call it, included collisions within human society and collisions of humanity with the natural world, bringing alternations of growth and disaster. The collisions included warfare among societies, expansion of both high-status and low-status migration, the creation of a fluctuating global commercial network, and epidemics and climate disasters resulting in part from human expansion. Steady warming took place from 700 CE up to 1250 CE. Such warming, causing population and agricultural output to rise, is well documented for Europe but also confirmed for other parts of the world (Campbell 2016, 21–22). At the same time, in the regions where societies had built the densest populations and the most innovative technology, an era of warfare and social conflict unfolded along with the warm and humid climate. Examples on every continent document this era's warfare and successive imperial conquests, alternating with commercial expansion.[10] The Mongol state, exploding from 1200 CE, became the extreme example of conquests in response to new opportunities. Then, after 150 years of Mongol conquest and widespread empire, epidemic disease checked the empire. Bubonic plague, perhaps facilitated by increased contact of the Mongol empire, spread beyond Mongol frontiers from the 1340s through Asia and Europe, causing population, commerce, and empire to decline, and soon affecting Africa.[11]

Ruddiman (2014) argues that these epidemics show how changes in human society can reduce temperature as well as increase it. Declining population meant less farming—the fields became overgrown and herds of animals declined, so that carbon dioxide and methane emissions declined, resulting in temperature reduction. Then, from the sixteenth century, Old World diseases caused a collapse in American populations and, with it, declining agricultural output.[12] This Columbian Exchange may also have led to disease and population decline in the Old World that has not otherwise been accounted for, as exemplified by the case of syphilis. The Little Ice Age, a three-century worldwide decline in temperature, reached its low point in the mid-17$^{th}$ century, thus responding in part to changes in human society.

Migration studies, expanding in geographic and temporal scope, are gradually revealing the long-term dynamics of world history from 800 to 1800. Such studies, clearly linking worldwide population flows since 1500, are beginning to show connections to pre-1500 populations and migration worldwide. Global commerce and warfare each expanded, with fluctuations, from the 11$^{th}$-12$^{th}$ centuries until they brought the opening of global maritime connections by 1500. Merchants turned especially to enslavement as they sought labor to support expanding commerce. From the fourteenth century, enslavement focused on African laborers so that, from the mid-17$^{th}$ to the mid-19$^{th}$ century, the principal flow of international migrants was that of African captives crossing the Atlantic but also driven to the Mediterranean and the Indian Ocean. Atlantic flow reached 100,000 captive voyagers per year.

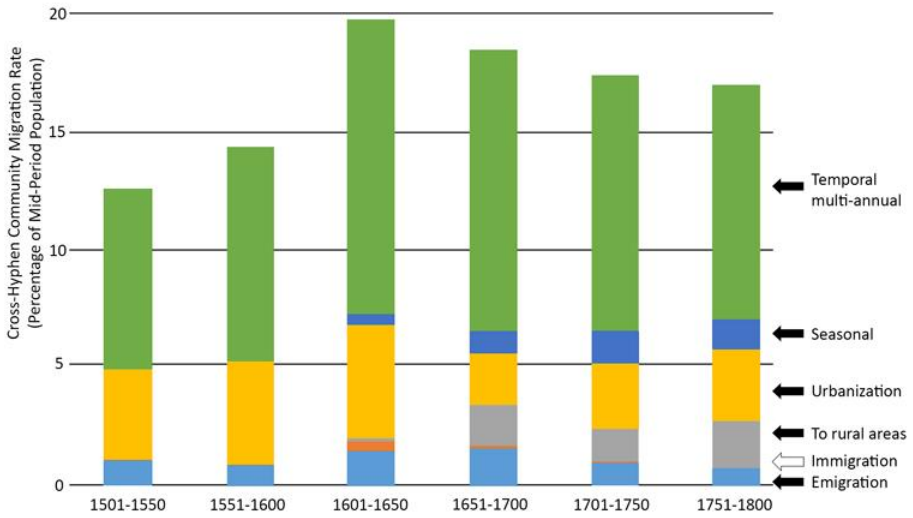
In an important analytical advance, migration scholars Jan and Leo Lucassen (2014, 3–54) developed a comprehensive framework for accounting of migration, applying it to large and literate cultural and political units. Focusing initially on Europe (including European Russia), they tallied several types of both domestic and cross-

[10] Viking, Fatimid, Song, and other conquerors built empires between 800 and 1000 CE.

[11] Work by Monica Green (2018) and others indicates that Africa too suffered from plague and population decline.

[12] Genetic techniques estimate a population decline of roughly 50% for the Americas (O'Fallon & Fehren-Schmitz 2011).

Figure 3. Europe's Cross-Cultural Migration Rate, 1500–1800. Source: Lucassen & Lucassen (2014, 17).




border migration. For the period 1500–1800, they found the largest category of internal migration to be temporal multi-annual migration, consisting of the recruitment of soldiers, sailors, and artisans within the region, as indicated in Figure 3. They also tallied seasonal migration, urbanization, and rural resettlement. For external migration, they tallied immigration to Europe (which was tiny) and emigration from Europe (which was larger though much smaller than the contemporary forced migration of Africans). The Lucassens calculated a Cross-Cultural Migration Rate, summing migration in 50-year periods for Europe as a whole and taking it as a percentage of mid-period population for each period. Study of the parallel territories of China, Japan, and India showed some similarity in migration patterns.

For other times and places, one may ultimately be able to trace migratory detail parallel to that of the Lucassens' analysis. The results should reveal how human society transformed itself greatly during the 12,000 years of the Holocene epoch, relying at every step on the institutions and expansion of the preceding Pleistocene epoch. As people from around the world encountered each other more regularly, new hierarchies and new prejudices arose. Racial categorization and racial discrimination became a part of what marked the difference between migrants of high status and migrants who were subordinated (Manning 2009, 136–145). Such hierarchy is not unrelated to today's rejection and subordination of so many immigrants. One last collision in this era of collisions was the rise of capitalist economic organization—a new type of global commercial network, centered in the maritime powers of northwest Europe. Through creation of social institutions linking leading proprietors to national governments, Dutch, British and then other national economies expanded their influence in the global commercial network through a combination of warfare and investment in commercial practice. By the mid-nineteenth century, an alliance of proprietors, pro-capitalist governments, and their expanding empires gained leadership in much of the global economy.

**Anthropocene Magnification of Migration**

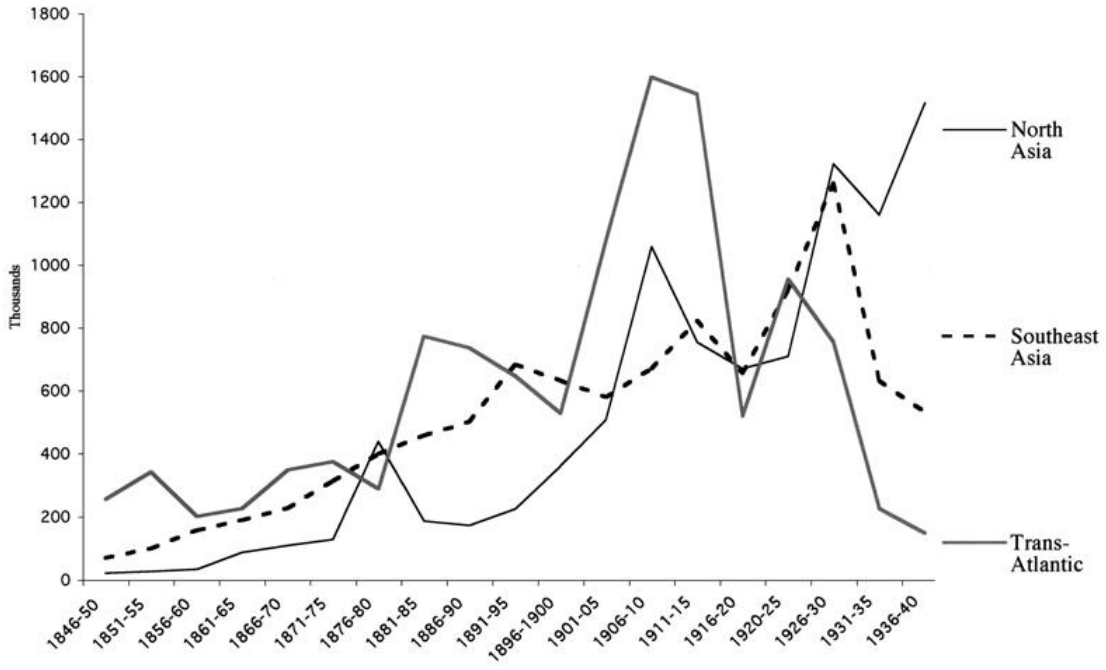
The Anthropocene epoch, beginning in roughly 1800 CE, is defined through the accelerated transformations by which human society became the principal influence on the natural ecology, making it appear that nature was at last being mastered. This epoch opened the fourth great wave of consequences of migration. Migration itself expanded, relying on networks of labor migration and knowledge exchange to bring about parallel expansions in the arenas of economics, population, and knowledge. After two centuries, the results brought unprecedented social inequality and environmental warming. To face these and related threats to the human system, new networks were required to attend to the needs of refugees fleeing social and environmental crises.

I turn first to the process of growth in migration and society, then to the emerging crises. Language provides an index of the expanding scale of society, as localized dialects gave way to national languages. While statistics are scarce on populations by language, certain language communities had grown by the nineteenth century to a million people—even several million—speaking virtually the same language. Language communities consolidated further during the twentieth century, through the influence of school systems and electronic communication.[13]

Nineteenth-century migration expanded at once for people of low status and high status: steamships had both staterooms and steerage. Travelers included viceroys, generals and their troops, labor migrants for agriculture and industry both rural and urban, as well as merchants and hawkers, students and skilled professionals. Through migration arose industrialization and its ideology of civilizational hierarchy by race, religion, and economic role. Capitalist economic structures expanded in North Atlantic metropoles and colonial peripheries. Coal was essential to developing steam power, but the burning of petroleum, beginning in 1860, became globally dominant before 1900.

I discuss the process of Anthropocene migration in further detail since it has become so huge and globally connected. Enslavement worldwide rose to a peak in the mid-nineteenth century in the Americas, Africa, and Asia, then declined as wage labor expanded. Irish migration exploded with the famine of the 1840s, followed by other European flows. This was the start of the era of free trade, in which great powers allowed no restrictions on trade and considered migrants as commodities in free trade, to be settled wherever there was a market for them. Nevertheless, indentured laborers too moved to the Caribbean, Southeast Asia, and the Pacific.

Figure 4. McKeown (2008) on global migration.




Historian Adam McKeown (2008) showed that the century of expanded international migration, 1840–1940, was not only transatlantic. As shown in Figure 4, McKeown traced peaks of 3 million emigrants per year—migrants leaving China, India, and Japan as well as those leaving Europe; he traced both the eastward and westward movement of Russians. Combining McKeown's analysis of international migration with the Lucassens' (2014)

[13] The same era brought the loss of many languages and dialects absorbed into these huge communities.

comprehensive analysis, both confirm that emigration grew greatly for Europe, while the Lucassens show that, in domestic migration, European urbanization expanded while "temporal multi-annual" migration declined.

Elsewhere, other migratory factors intervened, transforming the regulation of migration. Migrations from the 1840s to 1870s included Chinese migrants to California and elsewhere in North America. White citizens of the United States, having just conquered California, alternated between recruiting Chinese migrants as subordinate workers and expelling them as threats to American dominance of their newly acquired territory. McKeown (2008) found that US national bureaucrats sought to replace crude expulsion with another tactic for limiting immigration. They replaced the idea of migrants as commodities with the idea that some migrants might qualify as "free persons," persons of civilized background, able to contribute to the progress of the nation. The result allowed admission of small numbers but rejected most applicants. Each applicant for entry had to demonstrate an elaborate record of familial and professional excellence. In response, schools developed in China to prepare the applicants. Elaborate systems of passports and visas, inspected by a complex border bureaucracy, grew up within the US, then among other American nations, and gradually worldwide. In the 1920s, the US was able to establish restrictions on the number of persons who could enter the nation from any other land, privileging high-status over low-status migrants.

In two world wars, empires fought to the death in great, global cataclysms, involving huge migrations of military forces and great flows of refugees.[14] The Second World War led to restructuring of the global social order. A wave of decolonization brought national independence for Asian countries in the 1940s, for African countries in the 1960s, and then more generally. Formation of the United Nations, in part to preserve the peace among great powers, ended up doing at least as much to facilitate relations within the expanded community of nations. By the 1970s, empires had been replaced by passports and visas—and national statistics—for nearly 200 nations.

But with the abolition of slavery and the limits on admission of overseas workers, the demand for low-wage agricultural workers became more insistent. In the 1940s, the U.S. set up separate arrangements to bring in temporary workers from the English-speaking Caribbean for eastern US farms, and from Mexico for western lands. Out of these initially temporary flows developed permanent settlements of West Indians and Mexicans in the eastern and western portions of the U.S (Hahamovich 1997; Galarza 1964). In the context of decolonization, these migrations reflected the increased mobility of colonial and semi-colonial peoples. Even so, there had arisen two regimes of international migrants: to oversimplify it, high-status migrants could gain citizenship in their countries of destination, while low-status migrants could move only as temporary laborers.

By the end of the twentieth century—after decolonization, the rise and fall of communism, and the marginalization of trade unionism—a newly powerful industrial and financial capitalism had incorporated 200 nations into a global economic network that was united by migration, commerce, and communication. The social and environmental crises of this new order soon became apparent. Social inequality reached unprecedented levels, while hostility to migrants and ethnic differences brought social turmoil. Disruption of the natural world emerged most obviously with rising average temperature, but also with extinctions of species, elimination of forests, disruption of waterways, and eventually by huge mining and manufacturing projects that disrupted the atmosphere, the oceans, the lithosphere, and living creatures of all sizes. Viewed from this perspective, the future of humanity appears uncertain.

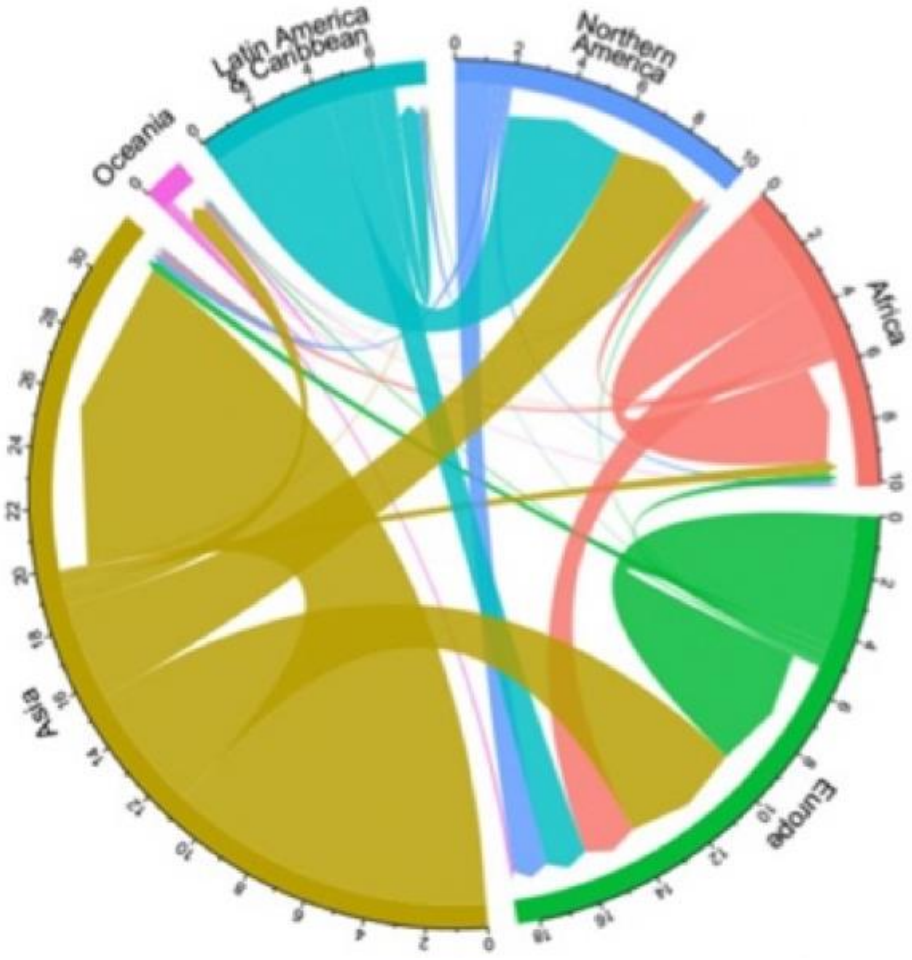
The argument that I offer here, asserting the role of migration in past transformation and present disruption, can be sustained only through more detailed documentation. Fortunately, advances in scholarship and data-collection provide a basis for detailed analysis of past migration and for projection of future migration. The United Nations has actively collected statistics since 1950, steadily broadening its scope to coordinate expanding nationhood and social complexity. Analysts, now with expanded knowledge, are therefore in a position to document migration systematically in present and past, making it possible to gain understanding of migration more fully (though not

[14] The migrations during World War I and especially World War II should be studied in more detail.

necessarily to control the effects of migration). In addition to population statistics, the UN first emphasized international migration, thinking especially of migration to relatively rich nations. For international migration, tallies have focused on *stocks* of "foreign-born" persons, by nation of residence. The largest such population is in the United States, which had over 40 million migrants in 2015 (15% of the national population total of 320 million). For the stock of out-migrants in 2015, the largest was 15 million born in India and living elsewhere. Yet stocks of foreign-born provide a one-dimensional view, making migratory populations look huge by showing accumulated numbers over an unspecified time period. Measures of *flows*, in contrast, are more specific in that they give the two dimensions of origin and destination and are also specified by duration.

Recent work on migrant flows has developed imaginative graphics such as that in Figure 5, showing regions of origin and destination.[15] It shows a total of 80 million migrant departures and arrivals in the period 2010–15, corresponding to departure plus arrival of 40 million individual migrants, at the rate of roughly 8 million per year.[16] The major flow from Latin America to the US is clear in Figure 5; it is also striking to see how many migrants moved from one part of Asia to another and from one part of Africa to another.

Figure 5. Migrant flow, 2010–2015. Source: International Organization of Migration (2018).




[15] This version aggregates migration flows by continent; disaggregated versions show migration flows among nations. On the methodology underlying this graphic, see Abel & Sander (2014).

[16] Outflows of migration begin at the edge of the circle; inflows of migration end with arrows pointed at the destination. Totals of in-migrants and out-migrants are shown at the edge.

This and other alternative modes of presentation point toward methods for more coherent quantification of migration. One can now identify at least four frameworks for documenting migration, all of which have been reformulated and improved within the past 15 years: (1) censuses and passenger lists, showing emigration and immigration, as shown in Figure 4 (McKeown 2008)[17]; (2) cross-community migration and diaspora, a framework for thinking about longer periods of time and migration from community to community (Manning 2006; 2020)[18]; (3) cross-cultural migration rate, accounting for domestic and foreign migration for a territory (Lucassen & Lucassen 2014); and (4) United Nations census summaries since 1950, expanded to include urban and rural population, migrant stocks, refugee stocks, and other surveys. All of these frameworks for reporting on migration are calculated on an annual or five-year basis, except for the Lucassens' (2014) 50-year calculation of the cross-cultural migration rate.

Table 1. Worldwide migration by category, in millions of persons per year, 2015. Source: United Nations (2018); International Organization of Migration (2018).

| | Population stock & flow | Rate o/oo |
|---|---|---|
| Global population stock, 2015 | 7,383 | |
| | | |
| Annual flows, 2015: | | |
| Net population growth | 85 | 11.5 |
| Migrants to urban areas | 78 | 10.6 |
| International migrants | 8 | 0.1 |
| Social refugees | 13 | 1.8 |
| Environmental refugees | 25 | 3.4 |

I believe it is feasible to devise standard figures, on an annual or five-year basis, to facilitate comparison of migrant flows over time and space. For 2015, I show the stock of global population, then five major flows as numbers of migrants and as rates of migration per thousand population: births (or net flows of population gain per period), domestic urbanization, and international migrants (the total of professional-level migrants and temporary migrant workers, social refugees, and environmental refugees).[19] Table 1 provides a summary of data for the year 2015.

Based on this approach, it should be possible to create standardized, multidimensional estimates of migration flows as a widely recognized statistic. These standard migration rates would need to be calculated on an annual or quinquennial basis. Such standardized migration rates per thousand population—calculated for nations, sub-national regions, continents, or the globe—could be compared to figures for GDP per capita. While gross domestic product gives a measure of output for discrete and isolated units of society, migration flows indicate interactions within and among societies. Combining per capita estimates of GDP and migration would yield a more representative summary of social units and their links. Details on migration could be shown by breaking down Table 1 by region or otherwise. Thus, births take place everywhere; population growth centers on tropical regions; international migrations are destined especially for wealthy countries; social refugees flee their homes especially in West Asia and eastern Africa, while environmental refugees are spread widely.

[17] McKeown upgraded this display from 2000 to 2007.

[18] For the African slave trade, this approach links a home population (40 million in Western Africa) to migrant flows of up to 100,000 per year, and to a diaspora population that expanded to 8 million.

[19] Asylum statistics, estimated by the UN for recent years, are not shown here.

**Future Changes in Migration**

This article's overview of past migration, though rapid, provides a basis for projecting future migration. In particular, I compare current population and migration (2020) with projections for the year 2050, roughly one human generation from today. I begin with the UN-projected global population of 9,771 million for 2050 (Table 2, Column 3), based on more than a half-century of UN demographic experience. Regional subtotals within this total reveal the following expected developments. Populations are to decline by 2050 in Europe and northern Asia, while populations will increase modestly in the Americas and Oceania, especially because of immigration. Populations in South, Southeast, and West Asia and especially Africa will increase. By 2050, Nigeria's population of over 400 million will exceed that of the US; Nigerian population density will be roughly ten times that of the US.

But the UN, while it projects rates of urbanization, has yet to project levels of refugee migration because of their high level of fluctuation. Nevertheless, for the future years of the Anthropocene, one must acknowledge that refugee flows have become part of our reality—both social refugees escaping national-level conflicts and environmental refugees escaping natural disasters. After comparing various migration flows and rates, I offer some speculations on future change in population and migration.

To clarify the complexities of projecting migration into the future, I offer two polar-opposite sets of assumptions. At one extreme, I assume that societies will put forth *maximal reform* efforts to reform society and limit climate change. That is, societies will regulate environmental degradation but also seek to limit economic inequality, limit group antagonisms, and achieve collaboration of all nations—large and small, rich and poor. That is a dream at one pole. The second and opposite polar option is that of *minimal reform*, in which I assume that individuals and societies will implement no additional corrective policy for climate change or social reform. This second pole is the path on which we are currently headed. In Table 2, Column 4 shows my projected 2050 figures for the maximal reform option, while Column 5 shows my estimates for the minimal reform option.

To complete the figures for Columns 4 and 5 in Table 2, I made additional assumptions, as follows. *Global population* and its growth are less than the UN projection in Column 3 because of lower tropical birth rates in the case of Max Reform and because of higher mortality rates worldwide in the case of Min Reform. *Urbanization* rises for the case of Min Reform as people flee the countryside. *International migration* triples with Max Reform because of expert allocation of skilled workers; it will double with Min Reform. *Social refugees* rise only modestly with Max Reform because of international cooperation but rise rapidly with Min Reform because of environmental and social chaos. *Environmental refugees* rise despite Max Reform because of temperature rise but rise even more to become the main form of migration in the case of Min Reform. While I have assumed that life expectancy and

Table 2. Two Speculations on World Population and Migration, 2050 (in millions). Source: United Nations (2019); International Organization of Migration (2018); Manning speculative estimates for Columns 4 and 5.

| Variables | Year 2015 | | Year 2050 | | Year 2050 | | Year 2050 | |
|---|---|---|---|---|---|---|---|---|
| | UN Estimate | Rate o/oo | UN Projection | Rate o/oo | Max Reform | Rate o/oo | Min Reform | Rate o/oo |
| Global population stock | 7383 | | 9771 | | 9500 | | 9300 | |
| | | | | | | | | |
| Annual flows: | | | | | | | | |
| population growth | 85 | *11.5* | 54 | *5.5* | 45 | *4.7* | 35 | *3.8* |
| migration to urban areas | 78 | *10.6* | 74 | *7.6* | 74 | *7.8* | 80 | *8.6* |
| international migrants | 8 | *0.1* | – | | 25 | *0.3* | 16 | *0.2* |
| social refugees | 13 | *1.8* | – | | 20 | *2.1* | 40 | *4.3* |
| environmental regurees | 25 | *3.4* | – | | 40 | *4.2* | 120 | *12.9* |

birth rates will each decline because of environmental crisis, my projections assume—perhaps dubiously—that levels of education and professional skill will continue to improve. These are preliminary speculations but I hope they can stimulate discussion, both to improve the technique of projecting migration and to draw the attention of policy-makers. I would not be surprised to find, if I were to survive for 30 years, that the deviations from past patterns became greater than I projected.

**Conclusion: Functions of Migration**

I have emphasized the role of human migration in creating an expanding succession of social groups and multi-layered networks. The basic human model of cross-community migration developed a sequence of variations, responding to changing social circumstances. Pleistocene migration began by supporting individual communities, then facilitated the colonization of new lands, the maintenance of community networks, and the long-distance exchanges of technology and culture. Holocene migration added a balance among dispersion, consolidation, and hierarchy of populations, finally generating global interconnection in migration. Anthropocene migration built networks for moving labor and knowledge, then began creating networks of social and environmental refugees.

I identify four principal functions of migration in the human order, which have operated simultaneously at the levels of community, society, and global system. Most basic is the function of sustaining human diversity in genetic constituents and in the social order. Cross-community migration, in which some young people typically leave their home to join another community, is a social mechanism of diversification that adds to the pre-existing genetic mechanisms.[20] Cross-community migration expands genetic diversity by bringing new genetic constituents into communities which, if left isolated, might become narrowly specific through genetic drift. Similarly, cross-community migration expands social diversity by opening discussions among people of different backgrounds, both enabling them to exchange their existing ideas and to develop new ideas out of their interaction. In another sort of diversity, migration is commonly unpleasant, fearsome, and dangerous. It facilitates human stratification through hierarchy and inequality. The arrival of migrants in a community may raise hostilities of one sort or another—as the receiving community seeks to repel or otherwise eliminate the migrants or as the migrants seek to conquer, oppress, or eliminate the community they enter.

The second function of migration is to mediate society's links to the Earth's climate and environment. Human activities have caused both rise and fall in global temperature, initially at a relatively small but significant level, and now with great power. A new factor today is the idea of conscious human intervention to limit temperature change. Nevertheless, temperature rise is such that polar ice caps will soon disappear and will not return. A third function of migration is to mediate connection within human society. Migration may cause social changes but may also simply spread news. Migration causes change as it influences both diversity and stratification: in recent centuries of global interconnection, migration has facilitated changes in identity. Even when migration is not a causal agent, it carries messages of change and innovation, as in spreading news on how to accomplish the shift in governance from empires to nations. Finally, the fourth function of migration is to influence conceptualization. Each migrant gains a new physical standpoint, creating new perspectives and generating new observations. Migration facilitates interactive thinking, as it takes one beyond thinking within a single category. Overall, migration is socially and biologically valuable in the interconnections that it facilitates at various levels.

**References**

Abel, Guy J. & Nikola Sander (2014). Quantifying Global International Migration Flows. *Science,* 343, 1520–1522.

Maxime Aubert, Pindi Setiawan, Adhi Agus Oktaviana, Adam Brumm, Priyatno Hadi Sulistyarto, E. Wahyu Saptomo, Budi Istiawan, Tisna Arif Ma'rifat, Vinsensius Ngesti Wahyuono, F. T. Atmoko, Jian-xin Zhao, Jillian Huntley, Paul S. C. Taçon, Daryl L. Howard, and Helen Brand (2018). Palaeolithic Cave art in Borneo. *Nature*, 564, 254–257.

[20] Genetic mechanisms of diversification include mutation of genes, recombination of chromosomes, and epigenetic or life-course modification of genetic activity by proteins.

Maxime Aubert, Rustan Lebe, Adhi Agus Oktaviana, Muhammad Tang, Basran Burhan, Hamrullah, Andi Jusdi, Abdullah, Budianto Hakim, Jian-xin Zhao, I. Made Geria, Priyatno Hadi Sulistyarto, Ratno Sardi & Adam Brumm (2019). Earliest hunting scene in prehistoric art. *Nature* 576 (2019): 442 - 445. Available from: http://doi.org/10.1038/s41586-019-1806-y. Accessed December 3, 2019.

Berwick, Robert & Noam Chomsky (2016). *Why Only Us: Language and Evolution.* Cambridge, MA: MIT Press.

Boyd, Robert & Peter J. Richerson (2005). *Culture and the Evolutionary Process.* Chicago: University of Chicago Press.

Campbell, Bruce M. S. (2016). *The Great Transition: Climate, Disease and Society in the Late-Medieval World.* Cambridge: Cambridge University Press.

Cann, Rebecca L., Mark Stoneking & Allan C. Wilson (1987). Mitochondrial DNA and Human Evolution. *Nature* 325, 31–36.

Ehret, Christopher (2015). Early Humans: Tools, Language, and Culture. David Christian (ed.), *The Cambridge World History,* Vol. 1: *Introducing World History, to 10,000 BCE*. Cambridge: Cambridge University Press, 339–361.

Fitch, W. Tecumseh (2010). *The Evolution of Language.* Cambridge: Cambridge University Press.

Flannery, Kent & Joyce Marcus (2012). *The Creation of Inequality: How Our Prehistoric Ancestors Set the Stage for Monarchy, Slavery, and Empire*. Cambridge, MA: Harvard University Press.

Galarza, Ernesto (1964). *Merchants of Labor: the Mexican bracero story: an account of the managed migration of Mexican farm workers in California, 1942 – 1960.* Charlotte, CA: McNally and Loftin.

Green, Monica (2018). Putting Africa on the Black Death Map: Narratives from Genetics and History. *Afriques: débats, méthodes, et terrains d'histoire,* 9. Available from: https://journals.openedition.org/afriques/2084. Accessed October 3, 2019.

Hahamovich, Cindy (1997). *The Fruits of their Labor: Atlantic Coast Farmworkers and the Making of Migrant Poverty, 1870–1945.* Chapel Hill.

Hansen, James E. & Makiko Sato (2011). Earth's Climate History: Implications for Tomorrow. July 2011. Available from: https://www.giss.nasa.gov/research/briefs/hansen_15/Paleoimplications.pdf. Accessed December 17, 2019.

International organization of Migration (2018). *World Migration Report*. https://www.iom.int/sites/default/files/country/docs/china/r5_world_migration_report_2018_en.pdf. Accessed September 27, 2019.

Kjaer, Kurt H. (2018). A Large Impact Crater beneath Hiawatha Glacier in Northwest Greenland. *Science Advances,* 4, 11, DOI:10.1126/sciadv.aar8173.

López, Saioa, Lucy van Dorp & Garrett Hellenthal (2015). Human Dispersal Out of Africa: A Lasting Debate. *Evolutionary Bioinformation Online,* 11, Supplement 2, 57–68.

Lucassen, Jan & Leo Lucassen (2014). Measuring and Quantifying Cross-Cultural Migrations: An Introduction. Jan Lucassen & Leo Lucassen (eds.), *Globalising Migration History: The Eurasian Experience 16th – 21st Centuries*. Leiden: Brill, 3–54.

MacPhee, Ross D. E. (2018). *End of the Megafauna: The Fate of the World's Hugest, Fiercest, and Strangest Animals.* New York: W. W. Norton.

Manning, Patrick (2006). Cross-Community Migration: A Distinctive Human Pattern. *Social Evolution and History,* 5, 2, 24–54.

Manning, Patrick (2009). *The African Diaspora: A History through Culture.* New York: Columbia University Press.

Manning, Patrick (2020). *A History of Humanity: The Evolution of the Human System.* Cambridge: Cambridge University Press, 37–43.

Manning, Patrick & Aubrey Hillman (2013). Climate as a Factor in Migration and Social Change, 200,000 to 5000 years ago. American Historical Association annual meeting, January 5, 2013. New Orleans.

McKeown, Adam (2008). *Melancholy Order: Asian Migration and the Globalization of Borders.* New York: Columbia University Press.

O'Connell, James F., Jim Allen, Martin A. J. Williams, Alan N. Williams, Chris S. M. Turney, Nigel A. Spooner, Johan Kamminga, Graham Brown, and Alan Cooper (2018). When did *Homo sapiens* first reach Southeast Asia and Sahul? *PNAS,* 115, 34, 8482–8490.

O'Fallon, Brendan & Lars Fehren-Schmitz (2011). Native Americans Experienced a Strong Population Bottleneck Coincident with European Contact. *PNAS,* 108, 51, 20444–20448.

Reich, David (2018). *Who We Are and How We Got Here: Ancient DNA and the New Science of the Human Past.* New York: Pantheon.

Ruddiman, William F. (2014). *Earth Transformed*. New York: W. H. Freeman.

Scheib, Christiana Lyn, Hongjie Li, Tariq Desai, Vivian Link, Christopher Kendall, Genevieve Dewar, Peter William Griffith, Alexander Mörseburg, John R. Johnson, Amiee Potter, Susan L. Kerr, Phillip Endicott, John Lindo, Marc Haber, Yali Xue, Chris Tyler-Smith, Manjinder S. Sandhu, Joseph G. Lorenz, Tori D. Randall, Zuzana Faltyskova, Luca Pagani, Petr Danecek, Tamsin C. O'Connell, Patricia Martz, Alan S. Boraas, Brian F. Byrd, Alan Leventhal, Rosemary Cambra, Ronald Williamson, Louis Lesage, Brian Holguin, Ernestine Ygnacio-De Soto, JohnTommy Rosas, Mait Metspalu, Jay T. Stock, Andrea Manica, Aylwyn Scally, Daniel Wegmann, Ripan S. Malhi, Toomas Kivisild (2018). Ancient human parallel lineages within North America contributed to a coastal expansion. *Science*, 360, 1024–1027.

United Nations, Department of Economic and Social Affairs. Population Division (2018). *World Urbanization Prospects: The 2018 Revision, Online edition.* File WUP2018-F03-Urban_Population.xls]. Downloaded August 13, 2019 from https://population.un.org/wpp/Download/

United Nations, Department of Economic and Social Affairs. Population Division (2019). International Migrant Stock 2019 (United Nations database, POP/DB/MIG/Stock/Rev.2019). Downloaded November 19, 2019.

Vavrus, Stephen J., Feng He, William F. Ruddiman, and Polychronis C. Tzedakis (2018). Glacial Inception in Marine Isotope Stage 19: An Orbital Analog for a Natural Holocene Climate. *Scientific Reports,* 8, 1, DOI: 10.1038/s41598-018-28419-5.

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**INSPIRATION FOR THIS ESSAY:**

# Manning, "Cross-Community Migration"

From Patrick Manning, "Cross-Community Migration: A Distinctive Human Pattern," *Social Evolution in History* 5 (2006): 27–28.

**Typology of Human Migration**

For communities defined by language, a four-part typology distinguishes migration of whole communities from migration within communities and between communities. This typology is designed to be trans-historical—that is, it is intended to apply to all periods of human history, given appropriate specification of the technology and institutions of successive historical periods. The categories are:

1. **Home-community mobility**: movement within the community, especially in search of mates. The function of such movement is to broaden the gene pool by moving within the community. All species follow this pattern, in one way or another. Among humans, the migrants are mostly females who move to settle in households with males.

2. **Colonizatio**n: individuals and groups leave home, move to a new habitat, and form communities modeled on the home community. The function of colonization is to extend the range of the community to new territories. All species follow this pattern, in one way or another. Among humans, the initial colonists are mostly males who settle in new territories that resemble their original habitat.

3. **Whole-community migration**: the community moves to a new habitat, usually following the feeding habits or life cycle of species on which they feed, based on a seasonal pattern. The function of such migration is to alternate among ecological settings and maintain an adequate supply of resources. Certain species of birds, fish, insects, and mammals are well known for the seasonal or life-cycle migrations of their whole communities. Among humans, pastoral nomads provide the clearest examples of whole-community migration.

4. **Cross-community migration**: individuals and groups move to join an existing community, learning its language and customs. The function of such migration is to share the experience and the labor of various communities. Such migrations are occasional rather than systematic among most non-human species. Among humans, cross-community migrants are commonly males. . . .

**Hypothesis**

The interpretive hypothesis emerging from this analytical framework is that, while several aspects of human migration are similar to or at least parallel to those of other species, cross-community migration is a distinctively human form of migration. Cross-community migration, in which human individuals and groups move to join an existing community and learn its language and customs, is a consistent, species-based form of behavior that systematically structures human life. Colonization, in which existing communities expand to new territories, is quantitatively significant in human migration, but has been less productive of social change than cross-community migration.

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**INSPIRATION FOR THIS ESSAY:**

## Jan and Leo Lucassen, "Measuring and Quantifying Migration"

From Jan Lucassen and Leo Lucassen, "Measuring and Quantifying Cross-Cultural Migration: An Introduction," in Lucassen and Lucassen, eds., *Globalising Migration History: The Eurasian Experience (16th–21st Centuries)*, (Leiden: Brill, 2014), 5, 54.

We think that many of the fears and aversion to a uniform definition of migration are unwarranted and that they need not necessarily lead to reductionism and meaningless levels of aggregation. Instead of harking back to a naïve and outlawed form of structuralism, following Nancy Green we propose a 'poststructural structuralism'[21], which combines explicit research designs and definitions with nuanced, layered, contextual, and culturally embedded historical research. . . .

The long-term trends in the rates of cross-cultural migrations in the four major parts of Eurasia (Europe without Russia, Russia, China and Japan) . . . show a common start, a long divergence and a recent convergence. These are consistent with the idea of a 'Great Divergence' in economic development between Western Europe and China in the Early Modern period, but it also shows how the gap—at least where cross-cultural migration are concerned—is closed in the second half of the twentieth century.

Moreover, our fourfold comparison includes Russia, whose migration rates already in the nineteenth century started to converge with those of Europe, and Japan into the debate. In the latter country migration rates accelerated somewhat earlier than those in China, but overall, East Asia as a whole follows a similar trend over the last two hundred years. Finally, it is clear that in all cases urbanization and therefore shifting labor markets was the key determining factor. The mobilization of a military workforce points in the same direction as does colonization. Next to economic factors, the compulsory mass recruitment of soldiers since 1800, in particular in the Western half of the continent, demonstrates the importance of state formation.

[21] Nancy L. Green, "The comparative method and poststructural structuralism: new perspectives for migration studies," in J. Lucassen and L. Lucassen, eds., *Migration, migration history, history: old perspectives and new paradigms*, 57–72 (Bern: Peter Lang, 1997).