

## f24 Out-of-Africa and multiregional hypotheses

< Y chromosomal DNA, molecular Adam >

I against my brother.

My brother and I against our cousin.

My brother, my cousin and I against the neighbors.

All of us against the stranger. —Bedouin proverb.<sup>1</sup>

Discussion as to the origin of modern humans is divisive, with some participants favoring the *out-of-Africa hypothesis*, to explain the existence of, and others favoring the *multiregional hypothesis*, to explain the coming into being of, people anatomically and mentally like us.

Today, most individuals of the nearly seven billion people on Earth have four (2<sup>2</sup>) grandparents, eight (2<sup>3</sup>) great-grandparents all not closely related when born. Going back this geometric progression cannot be true and kissing cousins (reproductive success attends couples who are 3rd or 4th cousins)<sup>2</sup> in ancestors will have been an increasing feature so that, according to Damifin H. Zanette, all living people probably share at least one ancestor who lived 30 generations ago.<sup>3</sup> That is, the chances are that you are 80 percent likely to be the descendant of anyone you care to name who lived in the thirteenth century (which ended by such as Marco Polo and his family to China, Bantu-speaking peoples arriving in what is now Angola, and had begun with the Fourth Crusade sacking of Byzantine Constantinople). The other 20 percent of the people who lived then have no living descendants.

For 100,000 years before the Holocene, the entire human population of the world, as is variously evidenced, was never more than a few thousand individuals. So incest was the mating reality in the original group of early humans from which we all descend. The human population constriction implies a purging of harmful mutations (as carriers died out or failed to reproduce) as is invoked to explain the reproductive vitality of 56 feral highly inbred (genetically uniform) cattle isolated for 300 years, as never more than a tiny herd, in the area of Chillingham, northern England.<sup>4</sup>

The rush to modernity exhibited by our species and its balkanization is evidence that cultural transmission can enhance genetic fitness and compromise it.<sup>5</sup> Richard Potts posits: “Our genetic blueprint enables our brains and societies to live creatively in an uncertain world.”<sup>6</sup>

The *out-of-Africa hypotheses* is that *Homo sapiens sapiens* (modern *Homo sapiens*) is a relatively young species that evolved in an African locality. These (inbred) people dispersed and expanded their numbers through the world, replacing (rather than mating with) indigenes.

The contemporary *multiregional hypothesis*, a descendant of the ideas of Alfred Russel Wallace and Ernst Haeckel, was carried forward by Franz Weidenreich (1873-1948) who found Peking Man in China (the original fossils were lost but plaster casts of these arrived safely at the American Museum of Natural History where, after 1941, he continued his studies). His legacy is an iconic image most people know: the bush of human evolution pruned to a single lineage. Ian Tattersall offers the opprobrium: “[Weidenreich] continued to hew to older—and outmoded—notions of how evolution occurred, including the idea that evolution somehow proceeded toward a predetermined goal” as was espoused by the German school of *naturphilosophie*.<sup>7</sup> The multiregional hypothesis, yet favored by Teuku Jacob of Indonesia,<sup>8</sup> is detailed in Carleton Coon’s *The Origin of Races*, 1962.<sup>9</sup> In his opinion, African in origin Archaic populations migrated to distant regions and evolved separately but not in total genetic isolation there into modern humans. In this explanation, given human proclivities, small distances can account for tribes and great distances can account for races.

In a miasma of clines, species, for lumpers are biased samples and, for splitters are segregations that have their time. Niles Eldredge has little patience with lumper’s perception that “if we somehow miraculously had a dense and continuous fossil record of human ancestors, presumably we’d have the devil’s own time trying to tell different species apart.” His splitter’s position is “that anatomical evolution is intimately associated with true speciation (i.e., the origin of new reproductive

communities); species are discrete entities with distinct beginnings (their evolutionary origins) and ends (their extinctions).<sup>10</sup> This is as true of Pliocene hominids as it is of Jurassic dinosaurs and of Cambrian trilobites. It follows that paleoanthropologists' recognition of species of extinct hominids is absolutely crucial to their understanding of evolutionary dynamics.

The linch-pin of the out-of-Africa hypothesis is the DNA evidence that the Eve of modern humanity lived in Africa some 120,000 to 150,000 years ago. Also, two studies in 1995 indicated that all human Y chromosomes (a "molecular Adam") existed in the not too distant past. According to L. Simon Whitfield who analyzed non-recombining portions of Y chromosomal DNA this was between 37,000 and 49,000 years ago. According to Michael Hammer who describes the evolution of a 2.6-kilobase Alu element on the male-specific portion of the human Y chromosome this was between 50,000 and 400,000 years ago. Discrepancies besides, these determinations support the hypothesis that modern Y chromosomes spread when their bearers migrated out of Africa. Bolstering this, analyzes of human genes indicate *Homo sapiens* are too closely related to have evolved from *Homo erectus* ancestors from multiple, far apart, regions. The long term human population prior to migration, Hammer has reasoned, had an effective size of 10,000 and a sex ratio of 1. Christopher Stringer and Robin McKie, further this theme in *The Origins of Modern Humanity* and echo Theodosius Dobzhansky who charged Coon with advancing ideas quite congenial to racists and white supremacists. Stringer makes the case that if we are all descended from the final colonizing wave of late archaic African sapiens, "only slight differences, if any, in intellect and innate behavior are likely to have evolved between modern human populations." We are "all Africans under our skin."<sup>11</sup>

Even so, human fossil evidence is best accounted for by the *multiregional hypothesis*. Frustrating proof, however, is that the fossil evidence for humans is sparse and, for some critical human specimens, no age measurement is certain. Nevertheless, a cogent case made by Milford Wolpoff and Rachel Caspari in their book *Race and Human Evolution* is that, by occasional gene exchange, human populations retained through great lengths of time regional variations and yet became in concert modern humans and not separate species.<sup>12</sup> Also, genes more 200,000 years old in living humans have been found by Rosalind M. Harding to have non-African origins. These are a lineage of betaglobin genes (mutations of which cause sickle-cell anemia and other blood diseases) widely distributed in Asia but rare in Africa. Evidently archaic populations in Asia contributed to the modern gene pool.<sup>13</sup> All though is frustrated by *Pediculus humanus*. This head lice inflicts only humans and cannot survive off the human body for more that 24 hours. Two genetically distinct types exists: an Old World variety with a small genetic variability that records a bottle neck some 100,000 years ago; and a New World variety that is genetically so different that it would have diverged according to Kevin Johnson some 300,000 years ago (by codivergence of louse with moderns and archaic humans) or according to Dale Clayton some 1.18 million years ago (by codivergence of louse with *H. sapiens* and *H. erectus*). Both timetables shatter Wolpoff's multiregional evolution model (candelabra hypothesis) but can be worked into an out-of-Africa scenario: Lice that once exclusively fed on *H. erectus* in Asia jumped to some *H. sapiens* on their way to the New World.<sup>14</sup> And new findings ...

Don't explain! Just tell me the answer. Best is: *Homo sapiens*' lastingly-shared mutated blood alleles indicate back-to-Africa from southern Asia recently, and out-of-Africa 90-350 Ka, and out-of-Africa 420-840 Ka, and *Homo erectus*' diaspora out-of-Africa to southern Asia 1.7 Ma.<sup>15</sup>

**Footnote f25.1** Proteomic distinction between humans and chimpanzees correlatable with anatomic change known from the fossil record All (sampled) non-human primates have a high level of MYH16 protein in their jaw muscles. This gene promotes the accumulation of myosin heavy chains (MYH) that, Pete Currie writes, "are a critical protein component of the sarcomeres, the 'engine room' of skeletal muscle from which contractile force is derived." Large jaw muscles are characteristic of living primates and extinct forerunners of *Homo*, such as *Paranthropus* and *Australopithecus*. By contrast, a characteristic of the genus *Homo* is the absence of large jaw muscles that meet above the brain case. The trade off for a change of food that a small jaw forces was unrestricted ballooning of the human cranium and brain. Hansell H. Stedman in 2004 offers the hypothesis that the human MYH16 mutant, which prevents the accumulation of MYH, became the defining feature of genus *Homo* 2.5 million years ago.<sup>16</sup>