

Hominid Migration Lab

Name:

Introduction: Discoveries of fossil hominids around the world have helped scientists to determine not only a likely origin for the human species, but also a migration path throughout the world. Until the 1920's, Asia had been considered the "birthplace" of humans. Yet one man stood alone in his conviction that Asia was not the birthplace of humankind. This man was Louis S. B. Leakey. For several decades he searched the weathered desert slopes of Olduvai Gorge, looking along what had been the shores of an ancient lake once vital to the survival of many prehistoric animals. Eventually, his hunch paid off and his heretical views were confirmed with fossil evidence of early hominids, early members of humankind. Since then, other fossil hominids have been found by many other paleoanthropologists throughout much of the world. It is the type, dates, and distribution of these fossil specimens that gives us an indication of where humankind's earliest ancestors had migrated and originated.

Purpose: Using knowledge of geography and mapping skills, students will determine the location of a sampling of fossil hominids to infer a continent of origin and a likely path of migration from that point of origin.

Procedure: Examine the data below and plot each coordinate. Though this list is not an exhaustive list of all fossil hominid discoveries, it is accurate in terms of general trends of distribution and density within given regions. Mark your map by using different colored pencils for each different hominid. Then answer the discussion questions.

Data: -- fossil taxon (age in millions of years ago): location in degrees east or west longitude and north or south latitude, and name of site)

Australopithecines (3.5 -1.4 mya): 38°E :1°S Chemeron, 27°E: 27°S Sterkfontein, 43°E: 8°NHadar, 37°E: 4°S Olduvai, 36°E:5°S Laetoli, 36°E:7°N Omo, Kromdrai 26°E:26°S, 28°E:25°S Magapansgat, 27°E: 27°S Swartkrans, 38°E:4°N Koobi-Fora

Homo habilis (2.3-1.6 mya) 32°E: 27°S, 33°E: 25° S, 35°E:12°S, 35°E: 5°N,

Homo erectus (1.8 -.3 mya) 112°E:38°N Zhoukoudian, 112°E:8°S Modjokerto 18°E:18°N Yayo, 7°W:34°N Rabat, 38°E:4°N Koobi-Fora, 6°W:35°N Sale, 13°E:47°N Mauer, 27°E: 27°S Swartkrans, 27°E: 27°S Sterkfontein, 43°E: 8°NHadar, 37°E: 4°S Olduvai, 36°E:7°N Omo

Homo heidelbergensis (600,000 – 100,000 years ago) 27°E: 33°S, 23°E: 33°S, 33°E: 20°S, 40°E: 10°N, 32°E: 8°S, 20°E:6°S, 21°E 31°N, 9°W 30°N, 5°W 41°N, 5°E 58°N, 77°E 22°N

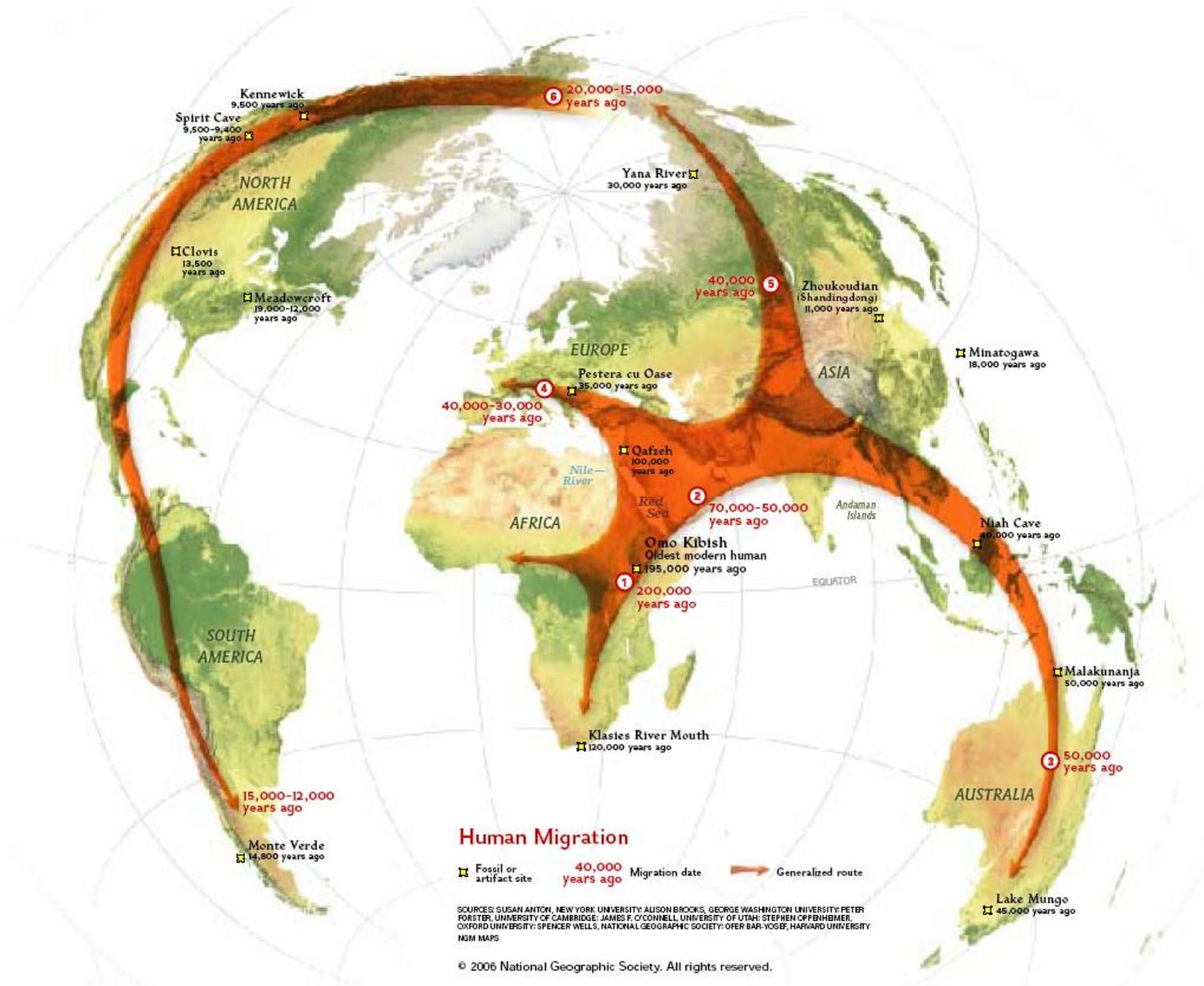
Homo sapiens neandertalensis (250,000-30,000 years ago) 36°E:33°N Amud, 110°E: 7°S Solo, 8°E:32°S Saldanha, 27°E:14°S Broken Hill, 68°E:41°N Teshik-Tash, 5°W: 35°N Gibraltar, 44°E:36°N Shanidar, 2°W:52°N Swanscombe, 11°E:47°N Steinheim, 7°E: 52°N Neandertal, 34°E:45°N Kiik-Koba, 5°W: 32°N Jebel-Irhoud

Early modern Homo sapiens sapiens (.1 - .02 mya i.e.Cro-magnon): 38°E:50°N Sungir, 3°E:43°N Lascaux, 18°E:48°N Predmost, 70°E: 62°N, 36°E:35°N Tabun,30°S:24°E Florisbad, 138°E:34°S Lake Mungo, 115°E:1°N Niah, 112°E: 38°N Zhoukoudian, 137°E:38°N , 99°W: 19°N Tepexpan, 75°W:2°N Punin, 120°W:44°N Marmes, 100°E:54°N, 70°E:23°N, 108°E:27°N, 32°E:27°S Border Cave, 35°E:32°N Jebel Qafzeh, 44°W:18°S Lagoa Santo, 88°W:32°N Natchez, 102°W:32°N Midland, 81°W: 27°N Vero Beach

Discussion:

Name:

1. What evidence in the fossil record suggests that Africa is the "birthplace" of humanity?
2. Which fossil taxon seems to have the earliest wide distribution throughout much of the old world? How did they get to these places? Pick two sites that are widely separated and infer the relative age of each specimen. (Which one is older than the other and explain your reasoning.)
3. Neanderthal seems to be most prominent in which area of the old world?
4. Early modern Homo sapiens sapiens were the first hominids to enter into which continent(s)? Choose one and infer a possible path of migration.
5. Where is the greatest coexistence between Neandertals and early modern Homo sapiens sapiens likely to have occurred? Explain how this may have contributed to the extinction of Neandertals.
6. Describe the overall migration pattern of humans and prehuman ancestors based on the data that you plotted on the map.
7. Do the data plotted seem to support the Out of Africa hypothesis or the Multi-regional origin of modern humans? Justify your reasoning.



8. Do you agree or disagree with the current theory of human migration pattern shown above? Explain what information you would use to support your position. Be specific in your response.

