## LETTER

## Northern Africa could also have housed the source population for living humans

Henn et al. (1) analyzed genetic diversity in extant African populations, including hunter-gatherers, and showed that indigenous hunter-gatherers in the Kalahari Desert have the longest population history, extending to 40,000 y ago or before. From this, Henn et al. (1) concluded that the source population for modern humans, including the group that expanded from Africa to Eurasia roughly 60,000 y ago, resided in southern Africa. There is the complication, however, that the dramatic climatic fluctuations of the late Pleistocene forced population redistributions, and this means that the ancestors of historic Kalahari hunter-gatherers could have lived elsewhere in Africa 60,000 y ago. They might subsequently have spread to replace preexisting southern Africans just as they spread to replace the Neanderthals and other preexisting Eurasians.

The historic Kalahari indigenes were among the rare African hunter-gatherers who survived to the present. However, archeology tells us that hunter-gatherer groups existed throughout the continent in the deep past and that they were mostly replaced during recent prehistory. Among prehistoric groups, the Middle Stone Age hunter-gatherers, who occupied southern Africa between about 120,000 and 60,000 y ago, are particularly germane to the conclusion of Henn et al. (1) because they are commonly said to anticipate modern humans in both anatomy and behavior. However, fossils and archeology show that the Aterian people, who simultaneously occupied northwestern Africa, were comparably modern or near-modern (2). In addition, Aterian craniodental fossils resemble fossils dated between roughly 120,000 and 90,000 y ago at the Skhul and Qafzeh Caves in Israel, as well as fossils dated to about 40,000 y ago from the Peştera cu Oase (Cave with Bones) in Romania (3, 4). In morphological details, the Peştera cu Oase fossils further resemble a fully modern skull dated to roughly 37,000 y ago at Nazlet Khater, Egypt (5). The fossil similarities matter, because the Skhul/Qafzeh people are often thought to signal a precocious spread of modern Africans to southwestern Asia, whereas the Peştera cu Oase people are believed to represent an early wave of modern African migrants to Europe. Fossils therefore suggest that northern Africa must also be considered as a possible source for the modern human expansion. DNA from ancient human bones is probably required to narrow the geographic alternatives.

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- 1. Henn BM, et al. (2011) Hunter-gatherer genomic diversity suggests a southern African origin for modern humans. *Proc Natl Acad Sci USA* 108:5154–5162.
- Baiter M (2011) Was North Africa the launch pad for modern human migrations? Science 331:20–23.
- Bailey SE, Hublin J-J (2007) Do Qafzeh and Skhul represent the ancestors of Upper Paleolithic modern humans? A dental perspective. Am J Phys Anthropol 132 (S44):67.
- 4. Harvati K, Hublin J-J (2009) The face of Dar-es-Soltane 5: A re-assessment. *PaleoAn-thropology* 2009:A14.
- Crevecoeur I, Rougier H, Grine F, Froment A (2009) Modern human cranial diversity in the Late Pleistocene of Africa and Eurasia: Evidence from Nazlet Khater, Peştera cu Oase, and Hofmeyr. Am J Phys Anthropol 140:347–358.

Author contributions: J.-J.H. and R.G.K. wrote the paper.



The authors declare no conflict of interest.

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