

Medieval Swahili people had both African and Asian ancestry

Analyses of ancient DNA from 80 individuals buried in medieval Swahili stone towns along the East African coast revealed that these individuals had both African and Asian ancestry. The findings suggest that in most cases, African women began having children with Asian men at least 1,000 years ago, at several locations along the coast.

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The problem

People from outside Africa arrived on the Swahili coast of eastern Africa by AD 900, and pioneering studies have attributed the development of towns and city states in the region to traders from Arabia and Persia¹. However, archaeological investigations have revealed that medieval Swahili culture showed continuity with the pre-urban material culture of earlier coastal African settlements². Whether the Swahili peoples responsible for building the stone towns along the coast originated from Asian or local populations has been under debate for about a century, mainly among non-local scholars. By contrast, the Swahili oral history embraces the culture's African and Asian roots³.

The observation

We sequenced ancient DNA of 80 individuals from 6 towns on the Swahili coast (Fig. 1a), dated to between 1250 and 1800, and an inland town dated to after 1650. We found that medieval Swahili populations had large proportions of both African and other ancestries (Fig. 1b). In most cases, the studied individuals were descended from Persian men and from African women from several local populations. A substantial proportion of the ancestry of the earliest stream of Asian migrants was derived from India. DNA data suggest that, over time, the fraction of Asian ancestry derived from Arab people rather than individuals from Persia increased, and people of the Swahili coast also married individuals from the African interior.

Medieval Swahili populations were formed predominantly by African women having families with Persian men, who had about 10% Indian ancestry. Such extreme sex bias of ancestral contributions can reflect a historical social hierarchy between the mixing cultures, so one might assume that it reflects a Persian conquest of African towns. However, a combination of the genetic data, cultural context and previous archaeological research⁴ suggests a more likely explanation. East African Bantu groups were matrilineal, such that a child's social identity was traced through their mother's line. Therefore, the sex bias among the ancestors of the studied individuals could suggest that African women voluntarily formed families with Persian princes or traders, linking the extensive trading networks and resource bases of African and Persian merchants. These families created trading communities with extensive social and kin networks, promoting the economic success of the medieval Swahili civilization.

The unions of Persian and local African individuals occurred at several locations along the eastern African coast by 1000; the Swahili oral history supports this account. Some Swahili populations still retain this medieval ancestry³.

The implications

The complex history of race, class and ethnic politics have made it especially challenging to ascertain Swahili identity. Indeed, comparing the genetic profiles of two cohorts of present-day Swahili-identifying individuals, we found that self-identification as Swahili does not reliably correlate with genetic medieval Swahili ancestries. Only present-day individuals from lineages connected to the medieval stone towns retained a large proportion of the genetic ancestry of medieval Swahili populations.

One limitation of this study is the varied preservation conditions of the human remains. Because Swahili tombs have been reused, recovered remains tend to be fragile, fragmentary and mixed. Moreover, grave goods and the fact that most of the studied individuals were buried in cemeteries inside (rather than outside) the town walls indicate that these were elite individuals. Non-elite populations, who would have been buried outside the town perimeters⁵, are not well-represented in this study. Thus, the ancestry of the wider population might differ from that of the individuals we analysed. Future research should aim to correct this over-representation of elite individuals.

Whether the medieval elite Swahili populations formed in one mixture event and then spread along the coast, or whether Persian–Indian immigrants had families with local elite Africans at several locations, remains unclear. This study has uncovered two separate instances of mixture. We might be able to detect further mixture events with expanded geographical coverage of Madagascar, Somalia, Mozambique, Comoros, Zanzibar and the Kerala coast of India, which is home to the Mappila Malayalam people.

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EXPERT OPINION

|| This study demonstrates a novel approach to examining the question of Swahili origins. The authors analyse DNA from 80 individuals buried at 6 sites across Kenya and Tanzania between 1250 and 1800. The data suggest some differences between the ancestries of

individuals in the northern versus the southern Swahili coast, and indicate that non-African DNA was probably introduced through male ancestors who were mostly from Persia.” (CC BY 4.0)

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FIGURE

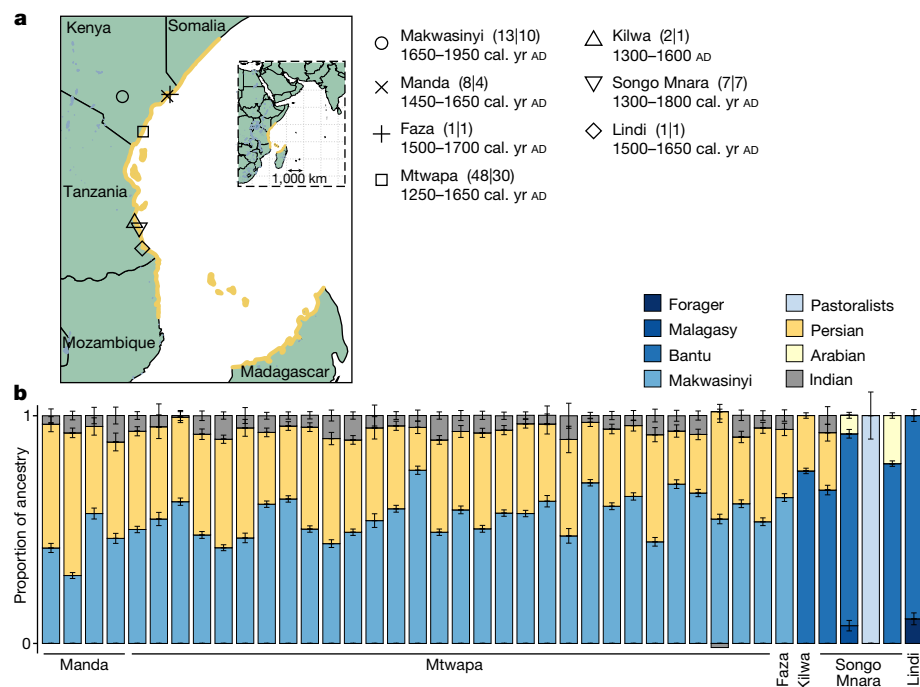


Figure 1 | Decoding the biological heritage of medieval Swahili individuals. **a**, Map of the Swahili coast (yellow) in the context of the Indian Ocean. Shapes depict the locations of the archaeological sites. Cal. yr AD, calibrated years AD. **b**, The estimated proportions of various ancestries of medieval coastal Swahili individuals. Most of these people have ancestry from local African populations (either Bantu or Makwasinyi – a mixture of Bantu and pastoralist communities), Persia and India. Some also show Arab, Malagasy (that is, from what is now Madagascar) or forager ancestries. Forager and pastoralist populations were nomadic groups. Error bars represent the uncertainty range of the ancestry proportions. Brielle, E. S. *et al.*/Nature (CC BY 4.0).

BEHIND THE PAPER

I have long been mesmerized by the Swahili coast’s magnificent monumental stone towns, which have been denied African ownership: pioneer archaeologists claimed they were the work of anyone but African peoples. Excavations revealed a material culture starkly contradicting that interpretation, however. I have spent the past four decades researching the ancestors of the Swahili peoples, who built these stone towns. This project began in 2008 when I teamed up with Sibel Kusimba, Sloan Williams and Janet Monge and, later, with Ryan Raaum. In 2018, J. Monge suggested reaching out to David Reich, whose team

generated genome-scale data for dozens of medieval and early modern people. D. Reich suggested that we also include samples from Songo Mnara, Tanzania, excavated by Jeffrey Fleisher and Stephanie Wynne-Jones. The Kilwa and Lindi samples were provided by Mary Prendergast and Elizabeth Sawchuk and enabled more-general statements about population formation along the medieval Swahili coast. E.S.B., who is part of the Reich group, led the data analysis. Part of the riddle of the Swahili peoples’ ancestry has now been addressed.

C.M.K.

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FROM THE EDITOR

This study adds substantially to ancient genomic data sets from the African continent and, in particular, to those from the span of recorded history. The data give detailed insights into the genetic ancestry of the peoples of the Swahili coast from the Middle Ages to today.

Michelle Trenkmann, Senior Editor, *Nature*