Facial masculinity not always a telling factor in mate selection

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Lawrence Sugiyama was part of an international research team that looked at how men and women consider potential mates in several cultures and economies where rates of infectious disease are high. Masculinity in men's faces surprisingly was not preferred by women. Credit: University of Oregon

Women living where rates of infectious disease are high, according to theory, prefer men with faces that shout testosterone when choosing a mate. However, an international study says not so much, says University

of Oregon anthropologist Lawrence S. Sugiyama.

The new study, on which Sugiyama is one of 22 co-authors, ended with that theory crumbling amid patterns too subtle to detect when tested with 962 adults drawn from 12 populations living in various economic systems in 10 nations.

The study—coordinated by Ian S. Penton-Voak of the School of Experimental Biology at the University of Bristol in the United Kingdom—appears online ahead of print this week in the Early Edition of the *Proceedings of the National Academy of Sciences*.

"It's not the case that women have a universal preference for high testosterone faces, and it's not the case that such a preference is greater in a high-pathogen environment," Sugiyama said. "And the opposite is also the case. Men don't uniformly appear to have a preference for more feminine faces, at least within the ranges of cultures shown in this study. In cultures tied to pastoralism, agriculture, foraging, fishing and horticulture, not so much, the authors concluded.

The closest the theory came to confirmation was in market economies in the study populations in the U.K., Canada and China, perhaps because, as Sugiyama's prior work has shown, preferences shift in response to the local range of variation in traits, and men in market economies have higher testosterone.

Also, Sugiyama said: "In large-scale societies like ours we encounter many unfamiliar people, so using appearance to infer personality traits can help cope with the overwhelming amount of social information. For instance, in all cultures tested, high testosterone faces were judged to be more aggressive, and this is useful information when encountering strangers."

Sugiyama and three other UO co-authors contributed to the study based on their work with the Shuar, a rural population with a long history of warfare in Ecuador and whose mixed economy today is based on horticulture, hunting, foraging and small-scale agro-pastoralism.

The Shuar did not come into contact with the outside world until the 1880s, and only since the 1960s have they organized into communities, Sugiyama said. The UO's research there is looking at the impacts of culture change on Shuar health. Data for the *PNAS* study were collected during routine sessions with 30 males and 31 females.

Each was shown culturally appropriate facial representations of potential opposite-sex mates and asked which one they'd prefer. Shuar women didn't like the faces of men whose faces suggested high testosterone levels. "Shuar women preferred slightly less testosterone-looking faces," Sugiyama said. The reason why was not clear, but he suggests that maybe Shuar women possibly have grown weary of years of warfare and would prefer mates who would be less likely to participate and encourage their offspring to engage in violent behaviors.

UO co-authors are J. Josh Snodgrass, a professor of biological anthropology, doctoral student Melissa A. Liebert, who has spent seven research seasons with the Shuar, and undergraduate student Ruby Fried, who has since earned a bachelor's degree from the UO and now is a doctoral student in anthropology at Northwestern University in Evanston, Illinois.

As with the UO team, the paper's other researchers contributed with data collected from the populations that they study. The study encompassed students and Cree populations in Canada, students and urban residents in two Chinese cities, the Tuvans in Russia, students in the United Kingdom, the Kadazan-Dusun in Malaysia, villagers in Fiji, the Miskitu in Nicaragua, the Tchimba in Namibia and the Aka in the Central

African Republic.

"Performance by the different populations wasn't chance," Sugiyama said. "For each society there was a pattern. There were significant preferences in each culture. Market economies do play a part, but something more was going on.

"I think the real message of this study is that we in this field need to stop and rethink how we have been thinking about these things," he said. "Maybe the idea of infectious disease—the presence of pathogens—isn't the main driving factor. The underlying adaptations are likely to track other ecological considerations and local cultural factors that we don't have data on and may eventually be very important in understanding attractiveness."

More information: Isabel M. Scott, Andrew P. Clark, Steven C. Josephson, Adam H. Boyette, Innes C. Cuthill, Ruby L. Fried, Mhairi A. Gibson, Barry S. Hewlett, Mark Jamieson, William Jankowiak, P. Lynne Honey, Zejun Huang, Melissa A. Liebert, Benjamin G. Purzycki, John H. Shaver, J. Josh Snodgrass, Richard Sosis, Lawrence S. Sugiyama, Viren Swami, Douglas W. Yu, Yangke Zhao, and Ian S. Penton-Voak. "Human preferences for sexually dimorphic faces may be evolutionarily novel." *PNAS* 2014 ; published ahead of print September 22, 2014, DOI: 10.1073/pnas.1409643111

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