

Foot binding and a biological approach to the study of Chinese culture

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(PhysOrg.com) -- Exaptation is a familiar concept to evolutionary biologists. It's the basic idea explaining that a trait can evolve because it starts serving a different function. Think of birds: at first, the most important role of their feathers was to regulate body temperature. But over time, feathers became an increasingly important showpiece to help attract mates. Same feather, different function.

For the first time, Stanford anthropologist Melissa Brown and biologist Marcus Feldman are bringing their academic disciplines together to apply the notions of exaptation and epistasis - the interaction between genes - to the study of [culture](#).

Their research focused on southwestern Taiwan in the early 1900s, when the Japanese colonial government banned the Chinese practice of binding the feet of young girls. Nobody expected it at the time, but the ban led to drastic changes in the lives of plains Aborigine villagers.

The Aborigines never bound the feet of their girls. But the neighboring Han Chinese did. The difference marked an ethnic border between the groups, and had long kept them from exchanging brides. But with the ban in place, Han-Aborigine intermarriages became common, and Aborigine marriage patterns began mimicking those of the Han.

These changes meant that more Aborigine women married into their husband's households, leaving fewer girls to train for key religious roles. While the Aborigines still believed women should hold those jobs, they

had no choice but to begin appointing men to the roles.

"On the surface, those things don't appear to be related," Feldman said. "But by changing specific aspects of a culture, we have to be careful about what other aspects of culture are likely to change."

While the villagers' marriage and religious practices changed, their religious beliefs stayed the same. It was an example of cultural exaptation.

In a paper published this week in the [Proceedings of the National Academy of Sciences](#), Brown and Feldman outline their findings, explore the unintended consequences of a government policy and make a case for applying a biological approach to anthropological study.

"We're putting forward a new way of looking at culture and cultural influences," Brown said. "We've put together work from earlier scholars that's not often combined. We think this can help make sense of how culture and social structure influences people."

Part of their research was conducted last year while Brown and Feldman were faculty fellows at Stanford's Institute for Research in the Social Sciences.

Provided by Stanford University

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