

Study of ancient Mayan facial expressions suggests some are universal

August 20 2020, by Bob Yirka



Ancient American sculptures with discernible faces and contexts. (A) Captive from Tonina archeological site (Mexico, 690–700 CE). Photo credit: Mauricio Marat, Instituto Nacional de Antropología e Historia.

inah.gob.mx/images/boletines/2016_215/demo/#img/foto5.png (1 July 2019).

(B) Tortured, scalped prisoner from Campeche (Mexico, 700–900 CE).

Baltimore Museum of Art, Kerr Portfolio 2868, photo by J. Kerr. (C) Maya man

carrying large stone (Mexico, 600–1200 CE). Kerr Portfolio 8237, photo by J. Kerr. (D) Joined couple (Mexico, 200–500 CE). Los Angeles County Museum of Art (LACMA) AC1996.146.21, gift of C. M. Fearing. (E) Maya woman holding child (600–800 CE). Princeton University Art Museum 2003-26, gift of G. G. Griffin. (F) Kneeling Maya warrior with facial tattoos and shield (Mexico, 600–800 CE), detail. Earthenware and pigment, 15.9 cm by 10.8 cm. Fine Arts Museums of San Francisco 2009.38.2, gift of G. Merriam and J. A. Merriam. (G) Maya ballplayer (Mexico, 700–900 CE). University of Maine HM646, William P. Palmer Collection. (H) Colima drummer (Mexico, 200 BCE–500 CE). LACMA, Proctor Stafford Collection, purchased with funds provided by Mr. and Mrs. Allan C. Balch. Credit: *Science Advances* (2020). DOI: 10.1126/sciadv.abb1005

A pair of researchers at the University of California, Berkeley, has found evidence that suggests some human facial expressions are universal across cultures. In their paper published in the journal *Science Advances*, Alan Cowen and Dacher Keltner describe their online study in which workers labeled faces they were shown with a given emotion.

Social scientists have been arguing for decades about the universality of human [facial expressions](#)—some suggest that many human facial expressions are common to all human cultures and thus have a genetic component. Others disagree, suggesting that most if not all facial expressions are relative to their [culture](#). The main difficulty in settling the argument has been finding a way to test it properly. Many studies have involved people from various cultures looking at pictures of people of different cultures to see if they identify the same expressions. But such studies have been tainted by the presence of the researchers—either by providing first-hand examples of such faces or by incidentally skewing answers by offering rewards for what they want to find. In this new effort, the researchers sought to get around these problems with an experiment in which modern-day English-speaking people identified the

emotions being expressed by people in ancient Mayan art.

The work involved collecting photographs of sculptures created by Mayan people between 600 and 3,500 years ago in what is now Mexico and Central America. The researchers focused on those that depicted what they believe to be universal facial expressions: pain, elation, sadness, anger and strain or determination. They next enlisted the assistance of Amazon's Mechanical Turk online workers, 325 of whom were assigned to look at the pictures and to choose which of the designated facial expressions was depicted. To ensure the workers were not being influenced by context, the researchers cropped out contextual influences in some of the photos and compared the resulting answers to those assigned to the same photo with contextual elements.

The researchers found that MTurk workers were mostly in agreement regarding which facial expressions correlated to which labels, which they claim shows that such facial expressions are universal across cultures—and in this case, across time.

More information: Alan S. Cowen et al. Universal facial expressions uncovered in art of the ancient Americas: A computational approach, *Science Advances* (2020). [DOI: 10.1126/sciadv.abb1005](https://doi.org/10.1126/sciadv.abb1005)

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