



Babies, brains, tools, and war: trends in human evolution

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Speaker

Professor Dean Falk

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*Dean Falk's interests include brain evolution and the emergence of language, music, analytical thinking, and warfare in humans. She has directed research on the brains (or traces of them in fossilized skulls) of apes, prehistoric human relatives, and relatively recent humans including *Homo floresiensis* ("Hobbit") and Albert Einstein. Her books include *Braindance: Revised and Expanded Edition* (2004), *Finding Our Tongues: Mothers, Infants, and the Origins of Language* (2009), and *The Fossil Chronicles: How Two Controversial Discoveries Changed Our View of Human Evolution* (2011). Falk's most recent book, *Geeks, Genes, and the Evolution of Asperger Syndrome* (2018), is coauthored with her granddaughter, Eve Penelope Schofield. For additional information see: www.deanfalk.com*

Location

Sir Roland Wilson Building
Conference Room 1.02
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Natural selection for walking on two legs (bipedalism) in our ancestors was associated with evolutionary-developmental ('evo-devo') changes in the physical development of babies. Over time, these modifications sparked other changes that have been retained in the growth and development of modern babies -- contemporary infants are born unable to crawl, stand, or walk; and without language. During the first 1-2 years of life, babies achieve physical milestones (including the first steps that enthral parents) more slowly than ape infants. Human infants also engage in social and vocal interactions with caretakers, which facilitates their eventual acquisition of language. Brain growth accelerates rapidly during early infancy as complicated neurological networks are formed to process language.

Later in children's lives, these networks contribute to the development of other kinds of abstract cognition, such as mathematical reasoning, playing musical instruments, and reading. Converging evidence suggests that the advanced cognition of humans emerged on the coattails of neurological networks that originally evolved in association with linguistic communication between helpless infants and their bipedal caretakers. This talk explores human evolution through an evo-devo lens, focusing on the fossil record of hominin brain evolution and the archaeological record of material culture, which reveals a general trend in complexity from simple stone tools millions of years ago to weapons of mass destruction today.

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