



International Seminar on Paleontology, Evolution,
Paleoecosystems and Paleoprimateology
Room 410, build. B35 (3rd floor, northern wing)

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Hand form and function in present-day *Homo sapiens* and implications for the evolution of hominins dexterity



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The hominin fossil record demonstrates that the *Homo sapiens* hand has undergone morphological and functional changes that distinguish it from other non-human primates. Evolutionarily-adaptive (or –exaptive) changes such as a larger thumb-finger ratio is generally associated with enhancements in manual dexterity and fine motor movements, including forceful pad-to-pad precision grips considered a uniquely *H. sapiens* ability. An important issue, yet very little addressed, of the study of the evolution of the manipulation abilities of the genus *Homo* is that we lack knowledge on the potential links between the manipulative behavior related to different environments, such as different occupations or different populations, and its influence on the morphological variability of the hand of *H. sapiens*. Moreover, understanding how modern-day influences affect hand form and function is important for evolutionary inferences. Specifically, my research explores the relationship between hand form and functional change in current populations, with the aim of providing a better understanding of how and why, the hand has changed over the last few millions of years. I will present the results of a study measuring grip strength and dexterity in a large heterogeneous sample of adult human participants to test for the potential effects of sex, age, manual laterality, hand morphology, and frequently-practiced manual activities. These data will be discussed in an evolutionary context to better understand how precision- and / or power grip-related behaviors (e.g., tool manufacture and use) influenced the evolution of the *H. sapiens* hand.

Ameline Bardo is a specialist in the evolution of manipulation abilities of primates and extinct hominins. She uses an interdisciplinary approach that allows her to enlighten the biomechanical advantages of certain hand morphologies, in particular, for tools manufacture and use.

