Men Are More Accurate than Women When Hitting a Target with Force in the Dark

June 30 2009

(PhysOrg.com) -- Could it be that men have evolved to be more accurate at hitting a target with a weapon in the dark than women? That's the surprising question left after a recent small study of human biomechanics conducted by evolutionary biologist Duncan Irschick of the University of Massachusetts Amherst and colleagues who studied the roles of various factors, including gender, on hammering force and accuracy.

Irschick presented preliminary results at the Society for Experimental Biology's annual meeting in Glasgow, Scotland on June 28.

"We examined four male and three female adults' ability to hammer on a force plate that measures the force of the strikes," he explains. He and colleagues were interested to know how the three main factors -- gender, target size and a challenging condition, in this case, darkness—affected performance. Their hypothesis was that there should be a force-accuracy tradeoff but only when conditions are optimal. That is, the person hammering will be more accurate on blows where they use less force and more forceful when they're less accurate.

"When conditions get more difficult, we proposed that this tradeoff would disappear as motor control becomes more variable," Irschick notes. "Our primary hypothesis was proven correct, but the more intriguing and surprising finding was that men and women differ in their ability to be accurate, with women being more accurate in the light, and men in the dark."

Irschick and colleagues believe the study indicates that “humans have remarkable compensatory ability during difficult motor tasks such as hammering in the dark.” Could it be that men have evolved to be more accurate than women at landing a blow upon an attacker, for example, in the dark? What role does experience play? And how does the ability to do other motor tasks evolve in individuals from childhood to adulthood?

These and related questions require further study, Irschick says. For now, he adds, “We think that this is an exciting finding that has ramifications for many aspects of motor control in different kinds of environments, such as humans performing difficult motor tasks in challenging environments. We are still exploring why this is happening.”

Provided by University of Massachusetts Amherst (news : web)