At the boundary of sexual selection: examining the evolutionary explanations for the absence of the human baculum

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Abstract

An argument often used to support a sexual selection hypothesis, is that a trait otherwise lacks a positive adaptive function, and therefore, natural selection is unable to explain its presence. But how would we recognize sexual selection in a mixed case, where a trait may be under simultaneous positive natural selection? The attempt to produce a sexual selection explanation for the absent human baculum can help answer this question. In most mammals, a baculum (or penis bone) is found in male individuals and plays a functional role in successful reproduction. Human males, however, are unusual in that they lack a baculum. Richard Dawkins has suggested a sexual selection explanation, stating "that females could glean all sorts of clues about a male's health, and robustness of his ability to cope with stress, from the tone and bearing of his penis." However, this hypothesis is not a clear case of sexual selection because the signal itself could contribute to fitness (it is easy to imagine how erectile dysfunction might reduce a male individual's reproductive success). Other evolutionary explanations for this absence have tended to focus on the duration and frequency of copulation in humans which has reduced the need for the baculum compared to other species. Is it possible to identify sexual selection in such a mixed case and would this support the general claim that sexual selection is an independent mechanism?

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