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A comment on the term sexual selection

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A comment on the term *sexual selection*

Sexual selection was defined by Darwin (1871) as: "The advantage which certain individuals have on other individuals of the same sex and species in exclusive relation to reproduction". The definition included competition by signals to attract mates and deter rivals as well as competition by physical fighting and efficiency in reproduction. Darwin assumed that he defined a second mechanism of selection and therefore he discussed sexual selection in contrast to natural selection. But, Darwin incorporated in the definition of sexual selection a mixed set of traits: traits used in fighting with sex rivals are not different from those used in fighting over food or any other resource and could evolve by classical natural selection mechanisms. On the other side, the extravaganzas that Darwin could not explain by the rules of natural selection, are all signals. However, signals which attract mates serve also to attract collaborators for other reasons and signals that deter sex rivals serve also to deter rivals in circumstances other than sex rivalry. I therefore believe that the term "sexual selection" is not very helpful to describe a selection mechanism.

In [Zahavi \(1981\)](#), I pointed out that signals are selected by a selection mechanism that is different from the selection of all other traits which are not signals. It is the selection mechanism of signals within sexual selection that evolved the extravaganzas such as the peacock tail and the antlers of deer, the traits that most probably stimulated Darwin to suggest the theory of sexual selection. Hence, although I agree with Darwin

that selection is composed of two selection mechanisms, I suggest that they are not sexual and natural selection but the selection of signals and the selection of all other traits which are not signals. Understanding the mechanism of signal selection, by the handicap principle, may be of help to reveal the information encoded by signals of mate choice and sex rival deterrence by considering the specific properties of signals ([Zahavi, 1981](#), [Zahavi and Zahavi, 1997](#), [Zahavi and Zahavi, 2012](#)).

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