

The crab that hoaxes for a mate

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 **Minh-Hoang Nguyen**, Ritsumeikan Asia Pacific University (Beppu, Japan)

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If you have ever given up pursuing your crush because you think that your rival's appearance is more good-looking and his gesture is more romantic than you, the fiddler crab can teach you a valuable lesson.

In the world of fiddler crabs (*Uca annulipes*) on intertidal mudflats, the enlarged claw is an important component of a male crab because it has multiple functions. The male uses the length of his claw to demonstrate his fighting ability to opponents [1]. During the mating season, the length of the claw is even more crucial, as it is utilized to battle other crabs and lure the female. The claw length, waving rate, the velocity of the wave down stroke, and leadership in a group of synchronously waving males can indicate the male's attractiveness. When males lose their claws, they normally develop new claws (leptochealous claws) that are identical to the original claws but lighter and less robust than the original ones (brachychealous claws).



Fiddler Crab (*Uca annulipes*); Creative Commons Attribution-Share Alike 2.0 Generic
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[legged Fiddler Crab %28Uca annulipes%29 %2815723422356%29.jpg](#)

This implies that regenerate claws are weaker and less effective weapons, but they cost less to employ in signaling than original claws of comparable length.

In a study published in *Proceedings of the Royal Society B: Biological Sciences*, Patricia R. Y. Backwell and her colleagues discovered that male crabs could use leptochealous claws to deceive other males with brachychealous claws not to challenge them, even though the males with brachychealous claws are more likely to win the fight. Moreover, as the leptochealous claws have lower mass, males with leptochealous claws produce sexual signals at a cheaper cost than equivalent-size males with brachychealous claws, retaining their competitive advantage in finding a partner [2].

Deception or lying can be a successful strategy in fiddler crab populations to compete for reproduction at the individual level. Reproduction allows the individual to generate offsprings that are biologically and genetically inherited from the parents [3]. In such circumstances, may males with leptochealous claws adversely influence the quality of the offspring's claws? If it does have an impact, is deception or lying really an effective strategy for collective survival, given that collective survival is highly reliant on reproduction? [4]

Such interesting phenomena and questions from fiddler crab populations can provide researchers with valuable insights into researching human survival strategies at both the individual and society levels [5-6]. One of the immediate insights is:

When you have a crush, be brave if you don't want to be hoaxed!

References

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