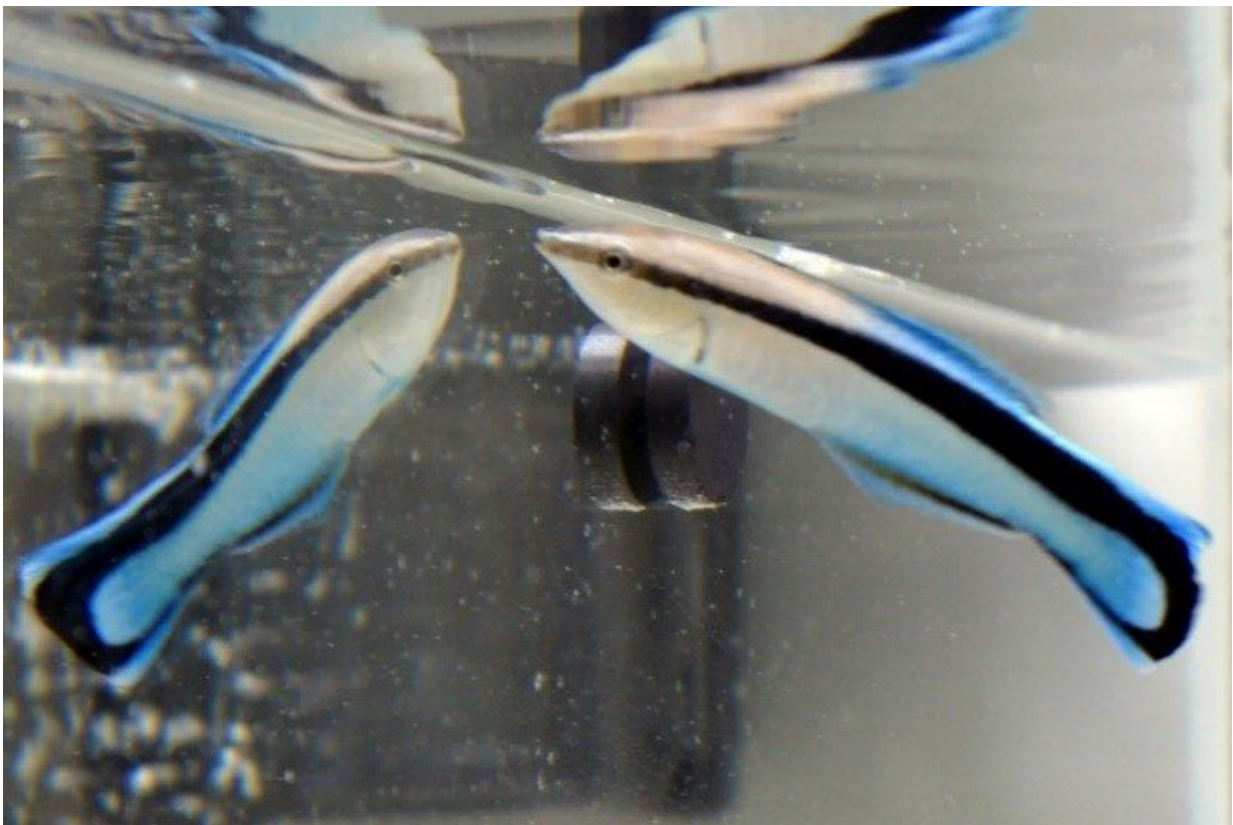


Cleaner wrasse check their body size in mirror before deciding whether to fight, research demonstrates

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A bluestreak cleaner wrasse (*Labroides dimidiatus*) swims in a tank at right, with its mirror image at left. Credit: Osaka Metropolitan University

An Osaka Metropolitan University-led team has demonstrated that

bluestreak cleaner wrasse (*Labroides dimidiatus*) check their body size in a mirror before choosing whether to attack fish that are slightly larger or smaller than themselves.

The study, published in [*Scientific Reports*](#), suggests that bluestreak cleaner wrasse possess some [mental states](#) (e.g., mental body image, standards, intentions, goals), that are elements of private self-awareness.

The team of OMU Graduate School of Science student Taiga Kobayashi, Specially Appointed Professor Masanori Kohda, Professor Satoshi Awata, and Specially Appointed Researcher Shumpei Sogawa, and Professor Redouan Bshary of Switzerland's University of Neuchâtel, were among the group that last year reported the cleaner wrasse could identify photographs of itself as itself, based on its face through mirror self-recognition.

This time, the cleaner wrasse's behavior of going to look in the mirror installed in a tank when necessary indicated the possibility that the [fish](#) were using the mirror to check their own body size against that of other fish and predict the outcome of fights.

"The results that fish can use the [mirror](#) as a tool can help clarify the similarities between human and non-human animal self-awareness and provide important clues to elucidate how [self-awareness](#) has evolved," doctoral candidate Kobayashi said.

More information: Cleaner fish with mirror self-recognition capacity precisely realize their body size based on their mental image, *Scientific Reports* (2024). [DOI: 10.1038/s41598-024-70138-7](https://doi.org/10.1038/s41598-024-70138-7)

Provided by Osaka Metropolitan University

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