

# Confirming the Ability of Fish to Think Logically:

## An Experiment Overturns Conventional Wisdom



Professor Masanori Kohda

The research group of Professor Masanori Kohda of the Graduate School of Science reported an extraordinary finding: they have confirmed that some types of fish can think logically, deducing that if  $A > B$  and  $B > C$ , then  $A > C$ .

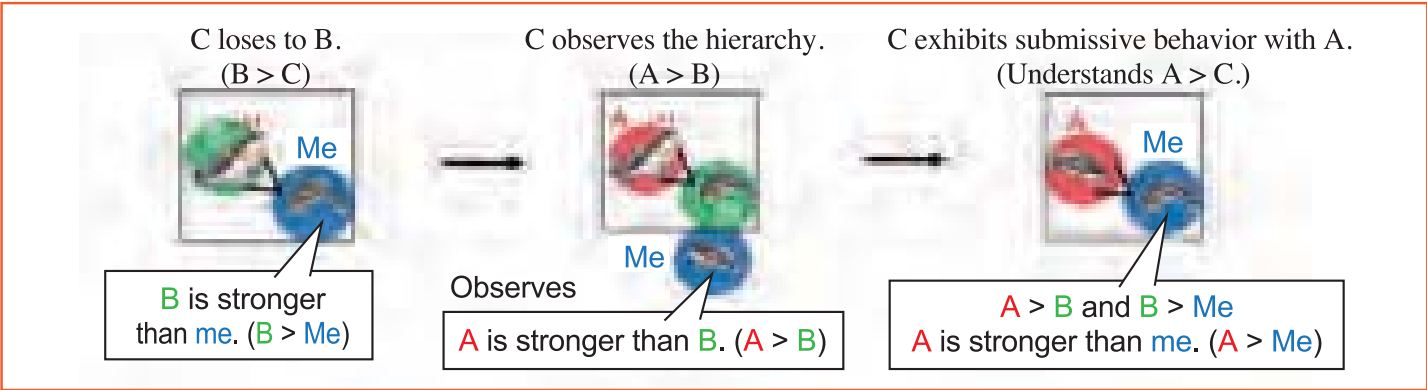
The experiment was conducted with 3 *Julidochromis* (Cichlid fish) of similar size, which were placed in an aquarium two at a time. First, fish B and C fought for dominance. After fish C lost, fish A and fish B were brought into confrontation, with fish C observing the match. When fish A defeated B, fish C concluded that  $A > C$  because  $A > B$  and  $B > C$ ; fish C then sought to escape from A when they the two were placed in the same aquarium. However, when fish C was not able to observe the battle between A and B,

fish C would confront A. Therefore, it is assumed that fish have the ability to use logic. In the experiment, 11 of 12 C fish showed similar behavior.

The same research method had been used previously for mammals and birds, but it had never before been used for fish. The finding overturns our conventional wisdom about fish.



*Julidochromis* contending for dominance



### Researchers in Focus



**Professor Masanori Kohda,**  
Graduate School of Science

As we had expected, Dr. Kohda acknowledged that he has been intrigued by living creatures since he was a child. When other children were fascinated with radio assembly and plastic scale models, he spent his boyhood observing nature in nearby reservoirs and fields. He often visited the beach in Wakayama with his father, who loved to fish.

“I still make a new discovery every time I dive in the sea!” said Dr. Kohda with a twinkle in his eye.

