

# Impulsive spider just as accurate as a docile one

Spiders have personalities, and individual traits determine how they hunt and make choices: NUS study

**Samantha Boh**

Spiders have surprisingly human traits, with personalities that determine if they make decisions hastily or cautiously.

But while a person who rushes into a decision might be more likely to make a mistake, an impulsive spider is just as accurate as a docile one, a study by researchers at the National University of Singapore (NUS) has found.

The study was conducted on *Portia labiata*, a species of jumping spider – an invertebrate known for its high cognitive ability.

The study found that aggressive individuals made decisions three to four times faster than their docile counterparts, but were just as accurate in hunting down their prey.

The researchers distinguished the spiders' personalities by stroking them with a brush. Those that attacked the brush were categorised as aggressive, while those that avoided the brush were categorised as docile.

The findings of the study were published recently in the scientific journal *Behavioral Ecology*.

Said Associate Professor Li Daiqin from the university's department of biological sciences, who led the study: "The outcome is rather surprising, as our team had initially thought that spiders that made quick decisions were more likely to make the wrong choices, similar to humans."

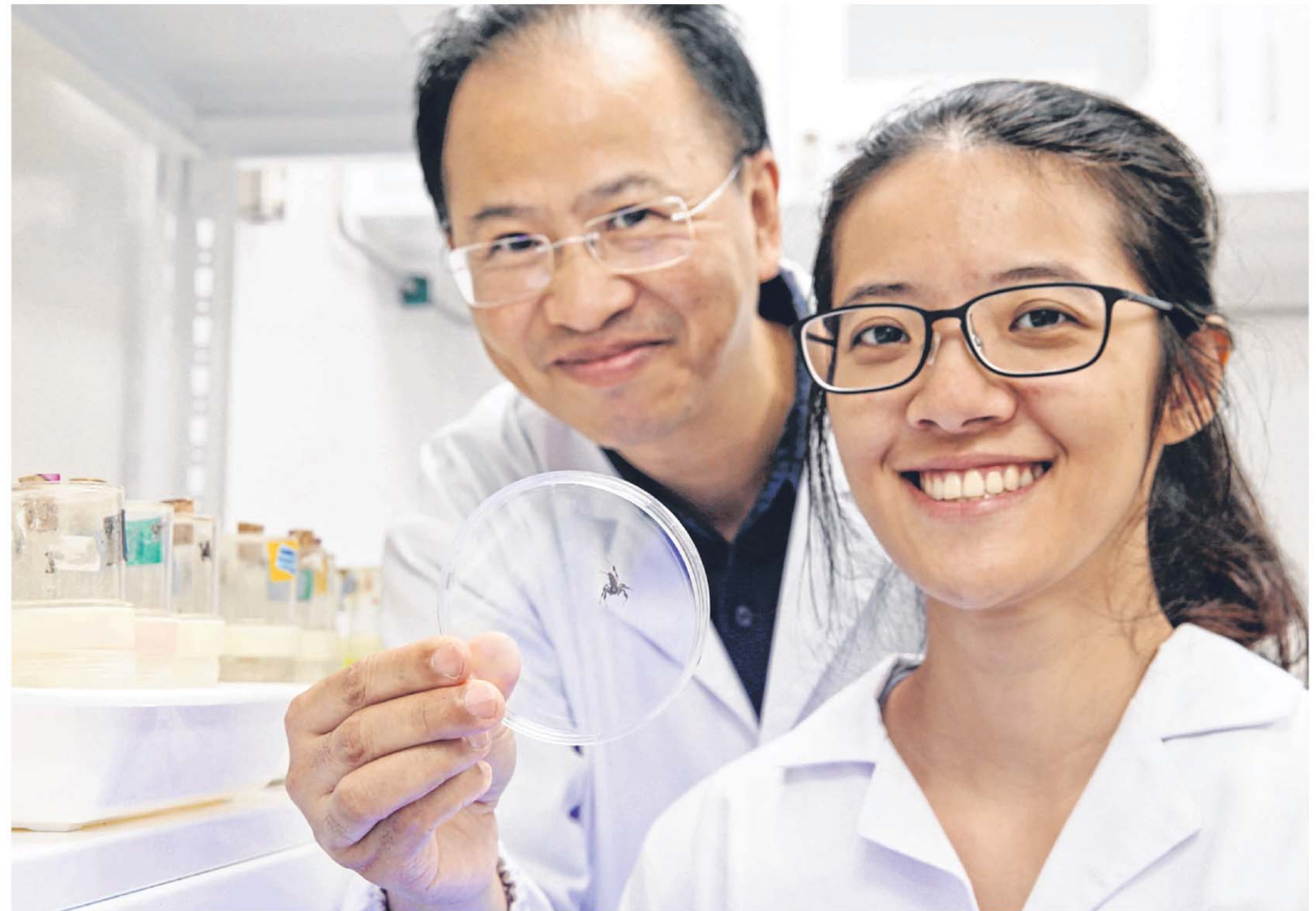
"This new knowledge provides us with a better understanding of ecological processes such as foraging and predator-prey interactions in the animal kingdom."

Prof Li said that animal behaviour studies in the past had focused on the average behaviour of the species studied, with individual variations in behaviour dismissed as "noise" during the research process.

Only in the past decade has interest in the behaviours of individual animals picked up.

"What we want to understand is whether a personality type influences fitness, including whether they survive better or have healthier offspring," said Prof Li.

In another study on *Portia labiata* led by Prof Li, aggressive and docile spiders had varying success in catching prey that displayed pre-



Associate Professor Li Daiqin and PhD student Chang Chia-chen are studying whether personality affects areas such as the ability of a species to survive, as management of animal personalities could help significantly in environmental initiatives. ST PHOTO: SEAH KWANG PENG

DARE TO EXPLORE

**Species that are bolder and keener to explore their surroundings might be more likely to invade new environments.**



**ASSOCIATE PROFESSOR LI DAIQIN**, who led the study.

dictable and unpredictable traits.

The prey used in the study was *Cosmophasis umbratica*, another species of jumping spider.

"The results showed that aggressive predators fared better when catching prey with unpredictable behaviour, while docile predators performed much better when hunting prey with predictable behaviour," said Ms Chang Chia-chen, a PhD student from the same department at NUS, who is the first author of both studies.

Prof Li said that the findings and the management of animal personalities could play a crucial role in areas such as conservation, inva-

sion biology and climate change.

"For instance, species that are bolder and keener to explore their surroundings might be more likely to invade new environments," he pointed out.

The team is planning to conduct further studies to test the relationship between the personality and the decision-making style of spiders by giving them tasks with various levels of difficulty.

The researchers will also study the gene profiles of spiders to identify the genes that are responsible for their personalities.

samboh@sph.com.sg