Accurate and timely decisions are critical for foraging, predator avoidance, and reproductive success. However, there is often a trade-off between speed and accuracy in decision-making, where individuals that make decisions more quickly make more mistakes. An individual’s personality may influence its decision-making style (i.e., whether it errs more in the speed or accuracy of a decision) and this relationship may change depending on contexts. Despite growing research on invertebrate personality, how personality correlates with decision-making style is still largely unknown and little research has assessed these relationships across tasks of varying difficulty. Here, we test the relationship between aggressiveness and decision-making style in *Portia labiata*, a specialized spider-eating jumping spider, in both a simple and a difficult task. We found that aggressive spiders made fewer directional changes before completing the tasks, regardless of task difficulty. However, decision accuracy was jointly determined by both aggressiveness and task difficulty. Aggressive spiders made more accurate decisions in the simple task, while docile spiders made more accurate decisions in the difficult task. We conclude that the relationship between personality and decision-making style in *P. labiata* is context dependent. We also discuss how the association between aggressiveness and decision-making style may serve important functions in maintaining behavioral variation in a natural population.

**Key words**: jumping spider, personality, speed–accuracy trade-off, task difficulty.