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Does learning ability differ with personality in dogs?

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Introduction

- Advances in understanding dog personality and learning ability can help match dogs to an owner or handler, providing a suitable and perfectly matched owner and dog (Coppinger et al, 2004).
- First, animal cognition is a developing area to measure an individual's welfare.
- Second, further research into dog personality and learning ability can improve our understanding of factors that affect cognitive performance which is much more complicated than simply intelligence.
- Third, new found knowledge on personality and learning ability can be used to assess dogs, especially puppies, for suitability for certain tasks.
- Overall, improved knowledge about a dog's individual personality can help promote better training and welfare (Svartberg, 2002).

Aims

• To understand how personality affects a dog's cognitive performance, using subjective and objective methods.

Methods

- Personality was assessed using the validated Monash Canine Personality Questionnaire (Ley et al, 2009).
- An objective approach was used to measure cognitive performance through two learning ability tasks, V-shaped Fence (figure 1) and Spin the Bottle (figure 2), using three measurements.
 - These three measurements included; Engagement, Performance and Subject's ability to learn through sets and attempts at each task.
 - These performance factors were then compared to the individual's results from the personality questionnaire.

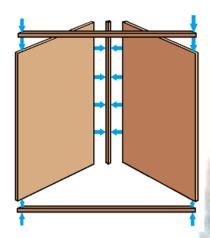


Figure 1: Shows the V-shaped fence learning ability task.

- Variables measured included; questionnaire personality traits;
 Extraversion, Motivation, Training Focus, Amicability and Neuroticism,
 all attempts in the learning ability tasks comprising of a total of 6 attempts for each subject, level of engagement, average performance and overall time improvement.
- Level of engagement with the task was measured retrospectively from video recordings by measuring how long the subject spent engaging with the task as a percentage of the total time taken to complete the task.
- Time taken to complete each attempt was measured using a stop watch during testing. Time taken to complete the attempt was subtracted from the maximum available time to give a score for "average performance".
- Latency to complete the task across multiple attempts within the set was measured to assess how readily the subjects learnt the tasks and improved with repeat performance, named "overall time improvement". Improvement in performance across attempts within a set was determined by the following formulas:

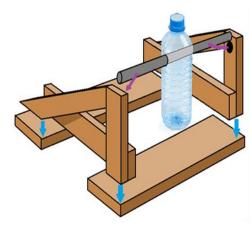


Figure 2: Shows the Spin the Bottle learning ability task.

-Improvement 1 = latency in attempt 1 – latency attempt 2.

-Improvement 2 = latency attempt 2 - latency attempt 3.

-Overall Improvement = latency attempt 1 - latency attempt 3

Results-Principal Component Analysis

Pearson's Product-Moment Correlation Coefficient test

- The test revealed that there was a significant correlation between Motivation and Average Level of Engagement in Spin the Bottle (P= 0.046, R=.362, N=31).
- Regarded as a weak and positive by the PCA test at 0.527, this figure could be argued that it had a high tendency.
- No other significant data were found in Component 2, Component 3, Component 4, Component 5 and Component 6.

Paired T-test

- The test showed that there was a significant difference in overall level of engagement between the V-shaped fence and Spin the Bottle task (N=31, R=.321, P=0.00).
- V-shaped fence showing higher levels of engagement at a mean of 3.9960 and Spin the Bottle at 2.5076.

Conclusion

- Although only one significant piece of data was found this key piece of data could be baseline knowledge on which to develop future research.
- Understanding that a dog's motivational state may impact learning ability can encourage owners to provide them with an appropriate task or training
- Understanding that individuals learn and perform differently is vital to improve welfare so animals remain in a balanced emotional state.

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