



NOT JUST FOR FUN – COGNITIVE TEST CAN PREDICT DOG'S EVERYDAY BEHAVIOUR STARTING FROM PUPPYHOOD

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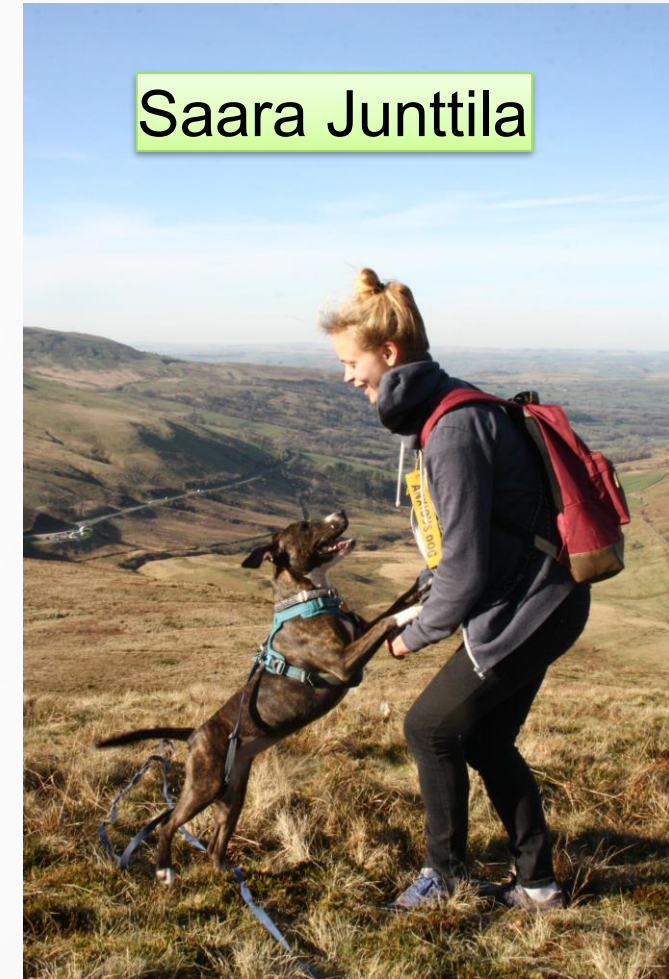
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BACKGROUND

- Lots of canine cognition research...but do cognitive tests tell anything about dog's everyday behaviour?
- Working dog population: some cognitive test batteries predict success for working role (Bray et al., 2017; Lazarowski et al., 2019, 2020; MacLean & Hare, 2018; Tiira et al., 2020)
- But what about all the other dogs? Pet dogs? Trainability, learning, impulsivity?

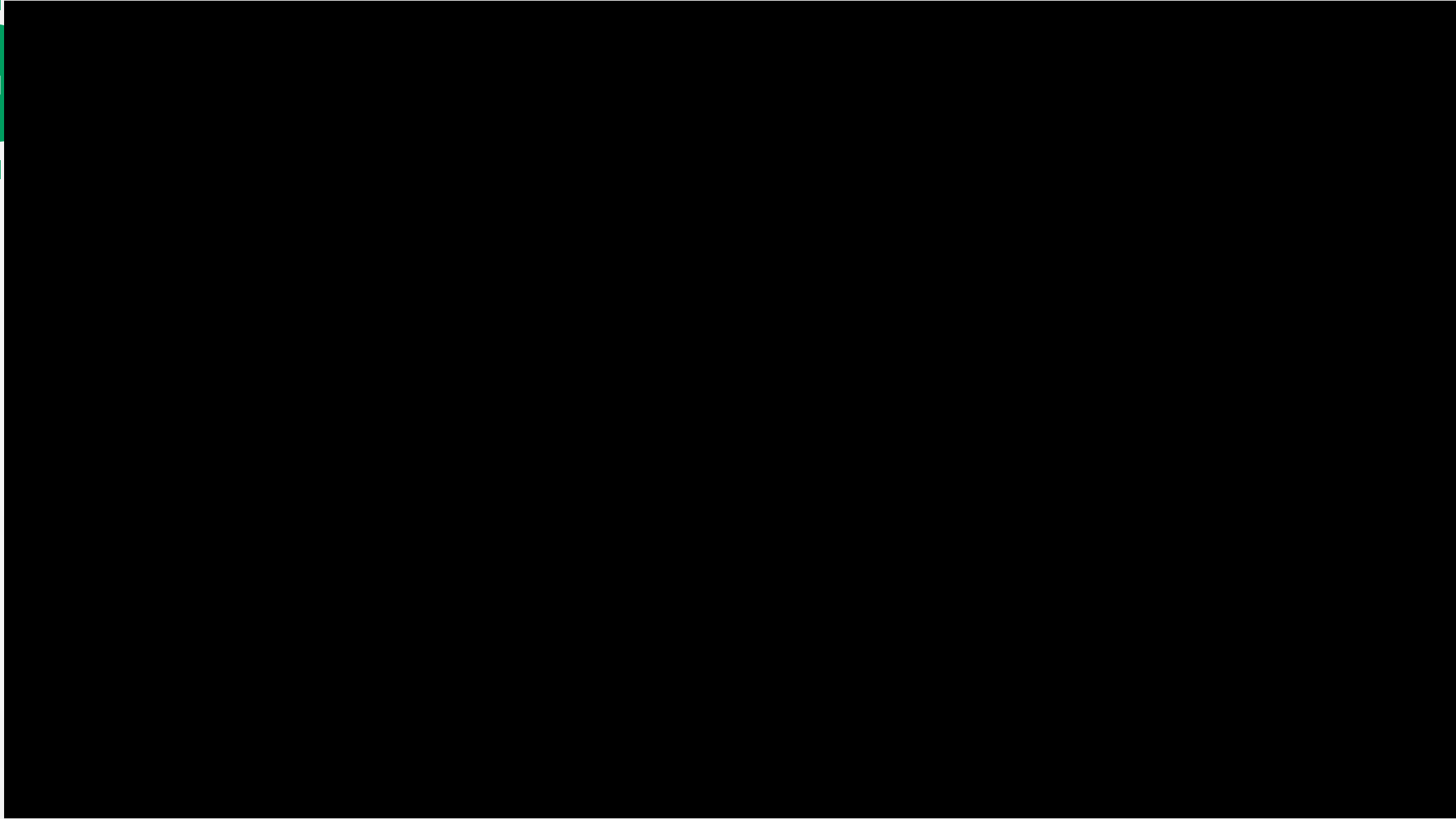




MATERIAL & METHODS



- Cognitive test data from smartDOG Ltd (Over 7000 dogs tested) (www.smartDOG.fi)
 - smartDOG COGNITION™ and smartDOG PUPPY™ test data
1. Test
 2. Questionnaires
- Canine Behavioural Assessment and Research Questionnaire, C-BARQ (Hsu & Serpell, 2003)
 - Dog Impulsivity Assessment Scale, DIAS (Wright et al., 2011)
 - Questionnaire: also several questions from the dog's background, training history, food motivation, etc





1. DO COGNITIVE TEST RESULTS OF ADULT DOGS CORRELATE WITH EVERYDAY BEHAVIOUR?



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N=987 dogs (8 months-8 yrs)

157 BREEDS

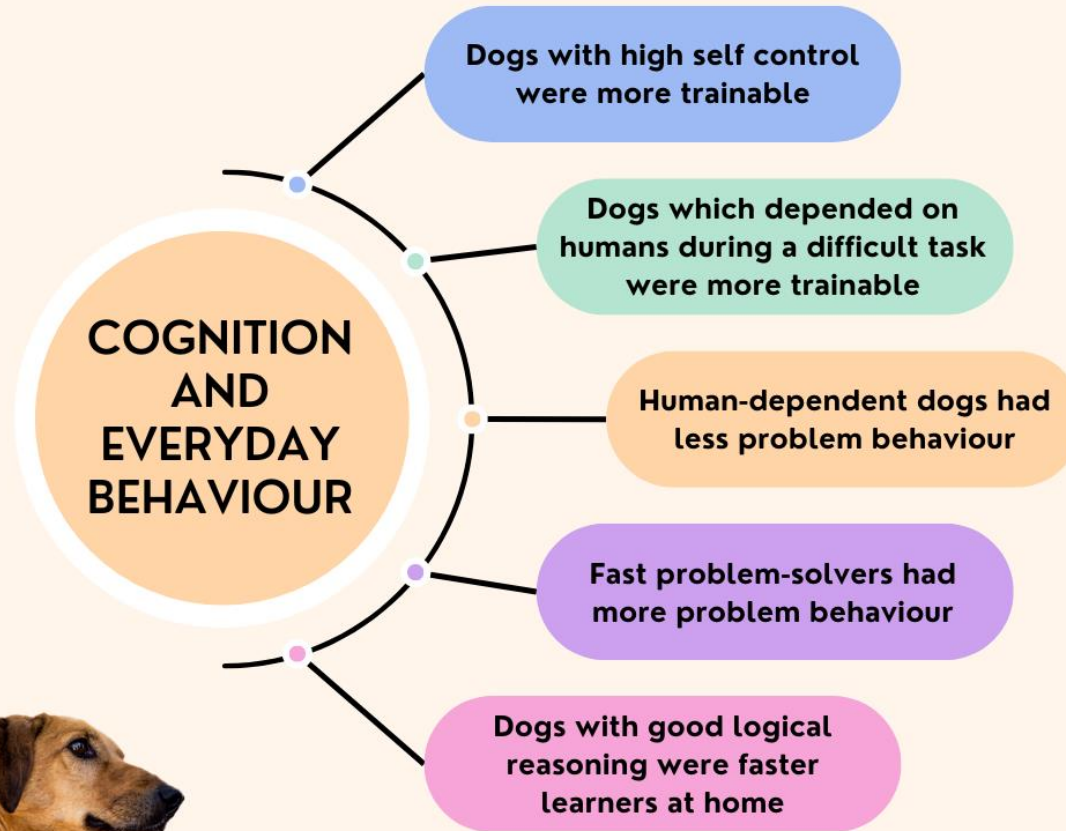
Test-retest repeatability (N = 56)

Test	Result	Analysis	Strenght of agreement
Cylinder	0.35	Weighted kappa	Fair
Gesture	0.53	ICC	Moderate
V-detour	0.48	Weighted kappa	Moderate
Human oriented (unsovable task)	0.46	Weighted kappa	Moderate
Logical reasoning	0.14	Cohen's kappa	Slight



Cylinder test & overall DIAS <0.001

Cylinder test & behavioural regulation DIAS <0.001



Junttila, S., Valros, A., Mäki, K., & Tiira, K. (2024). Do cognitive traits associate with everyday behaviour in the domestic dog, *Canis familiaris*?. *Animal Behaviour*, 213, 71-84.



smartDOG PUPPY – smartDOG
COGNITION TEST N=99

smartDOG PUPPY TEST & everyday behaviour
as adult (C-BARQ, DIAS) N=227

2. DO PUPPY TEST (3-7 MONTHS) PREDICT ADULT BEHAVIOUR?

Junttila et al 2025

PUPPY vs ADULT test results

TEST	r_s CORRELATION
GREETING	0.31
EXPLORATION	0.44
FITBARK	0.28
CYLINDER	0.15
GESTURE	0.41
UNSOLVABLE - INDEP	0.32
UNSOLVABLE - HUMAN	0.22

Puppy test greeting & adult stranger-fear in everyday life
 $r_s = -0.22, p < 0.001, N = 225$





3.BREEDS - DO THEY DIFFER?

13 dog breeds, N = 1002
dogs (Junttila et al 2022)

YES

Cylinder
Gestures
Unsolvable task
V-detour
Sociability
Exploration
Activity



CONCLUSIONS

- Cognitive tests correlate with everyday behaviour impulsivity, trainability, problem behaviour and learning speed (Junttila et al 2024)
- High independence, impulsivity and good problem solver → more problems?
- Puppy test gives an indication of the future personality – different kind of training for different kind of cognitive profiles? (Junttila et al 2025)
- Breeds differ in cognitive profiles – differences in impulsivity, trainability, etc (Junttila et al 2022)
- Relatively high heritabilities – breeding decisions?





THANK YOU!

Testers: Heli Vääätäjä, Sanni Somppi, Katja Kontu, Ulla Ruistola, Elisa Reunanen, Liisa Tikka, Kati Vierimaa, Mari Kallio, Päivi Kontkanen, Tiina Eskel-Mustonen, Sari Somersalmi, Nina Petäsno

Finnish Kennel Club

Dog Owners

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