

Genetic evaluation of temperament traits in the rough Collie

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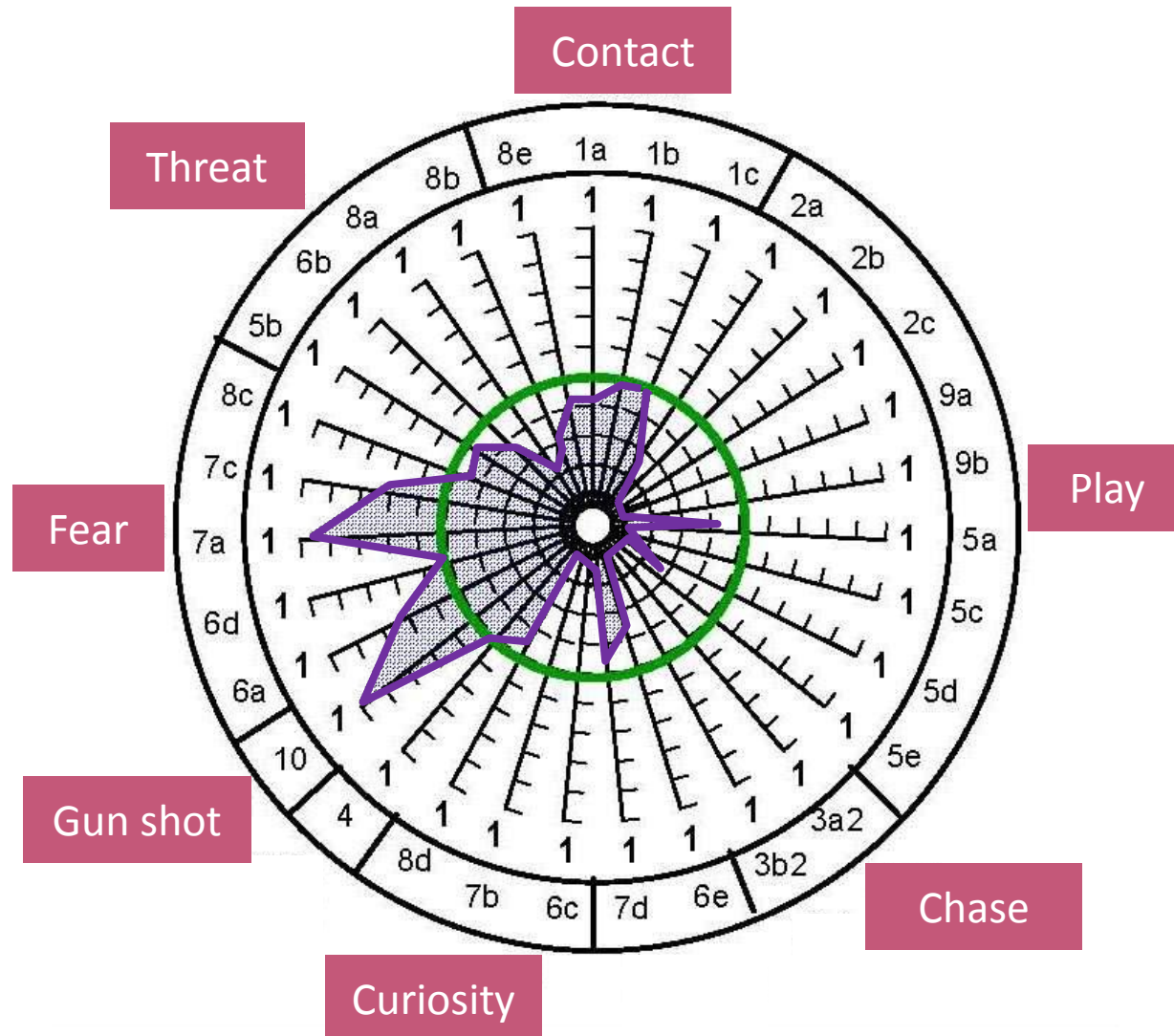


The Collie

- Scottish breed
- Herding dog, military purposes - today mainly companion/show
- Rough or smooth



Behaviour profile for Collie



Project "Mentally Sound Collie"

- Behaviour problems are recognized by the breed club and (some) breeders
- Goal: to start a breeding programme and a genetic evaluation for temperament



Dog Mentality Assessment (DMA)

- Standardized behaviour characterisation
- 33 situations scored
- 5 overall personality traits:
 - **Sociability**
 - **Curiosity/fearlessness**
 - **Playfulness**
 - **Chase proneness**
 - **Aggressiveness**

Dog Mentality Assessment (DMA)

- Collies are assessed before being bred – requirement for registration
- 2550 Collies assessed 1997-2010

Genetic analysis of DMA

- Model:

- Sex
- Test year
- Test month
- Age at test
- (Age at test)²
- Test occasion
- Litter
- Judge
- Genetic effect of the dog
- Residual

Fixed

Regression

Random



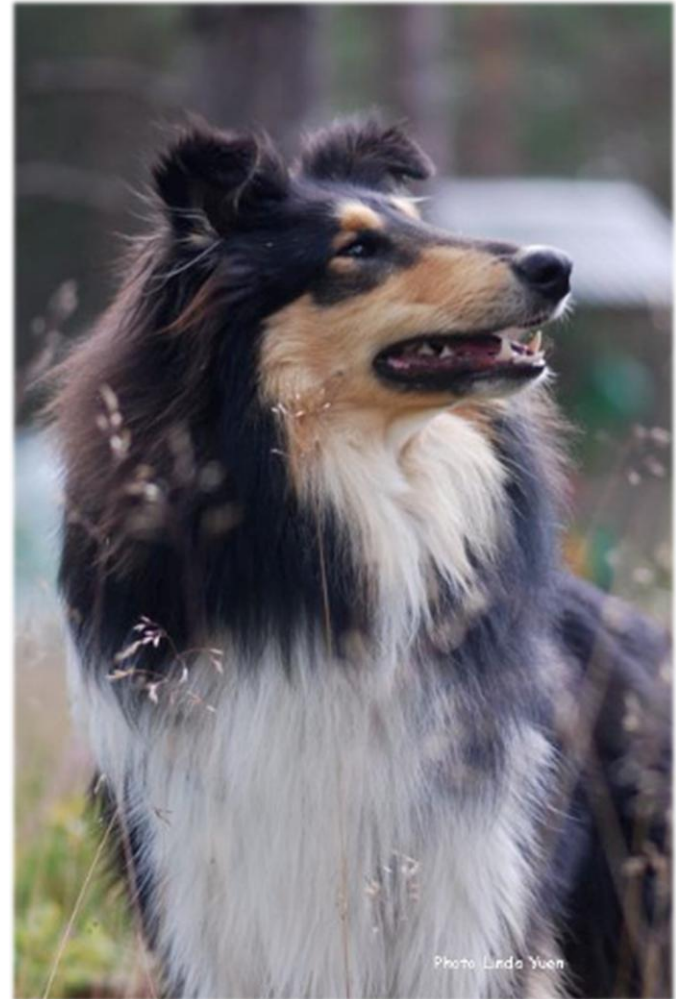
Heritabilities

- Individual items: h^2 0.05 - 0.31
- Personality traits generally higher:

Trait	Heritability
Sociability	0.25
Curiosity/Fearlessness	0.23
Playfulness	0.26
Chase-proneness	0.18
Aggressiveness	0.15

Questionnaire

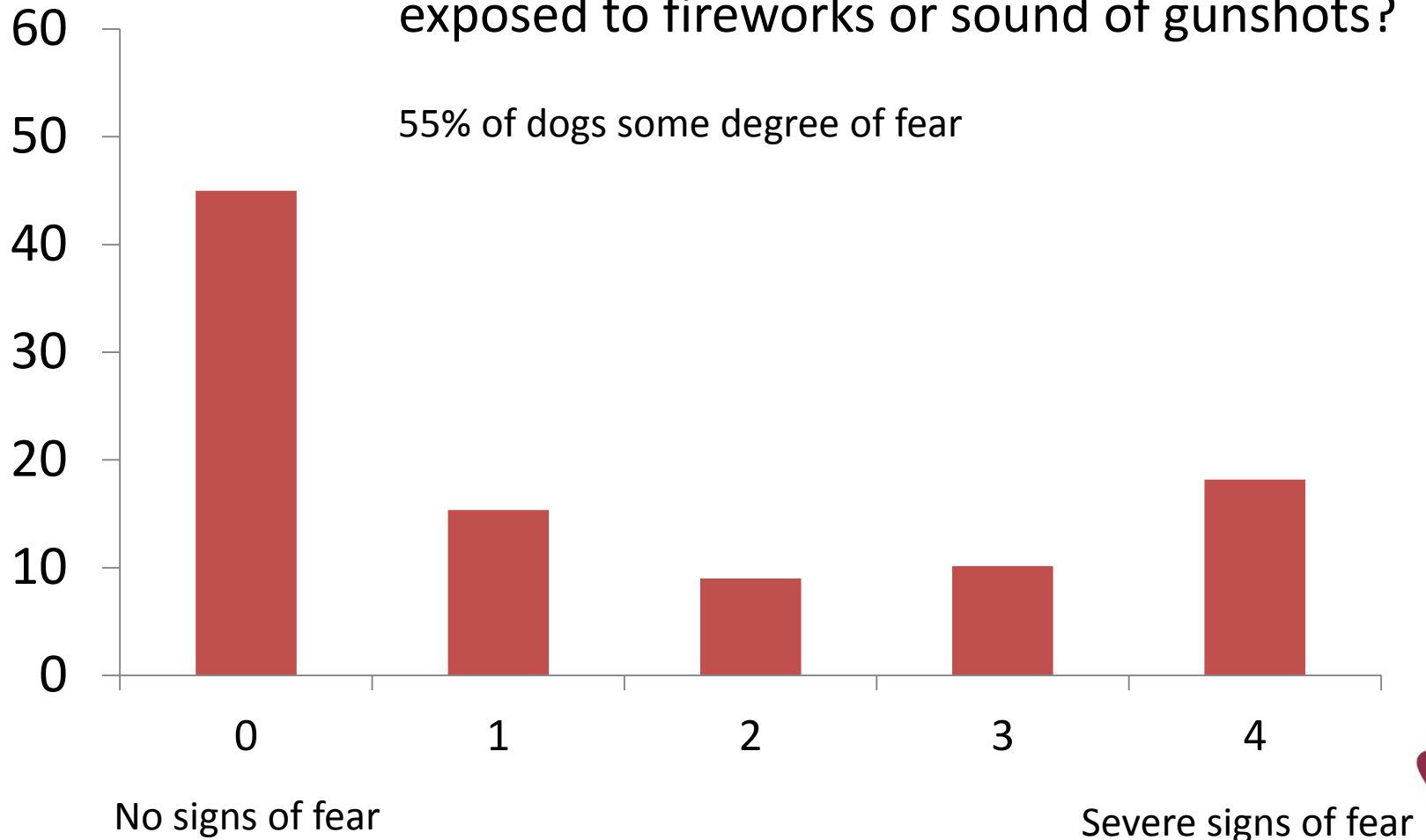
- Owner of dogs not more than 10 yrs old
- C-BARQ
- Information on 1766 dogs (50%)
- 935 of these were also assessed in the DMA (53%)



Fear behaviour in Collies

Does your dog show signs of fear when exposed to fireworks or sound of gunshots?

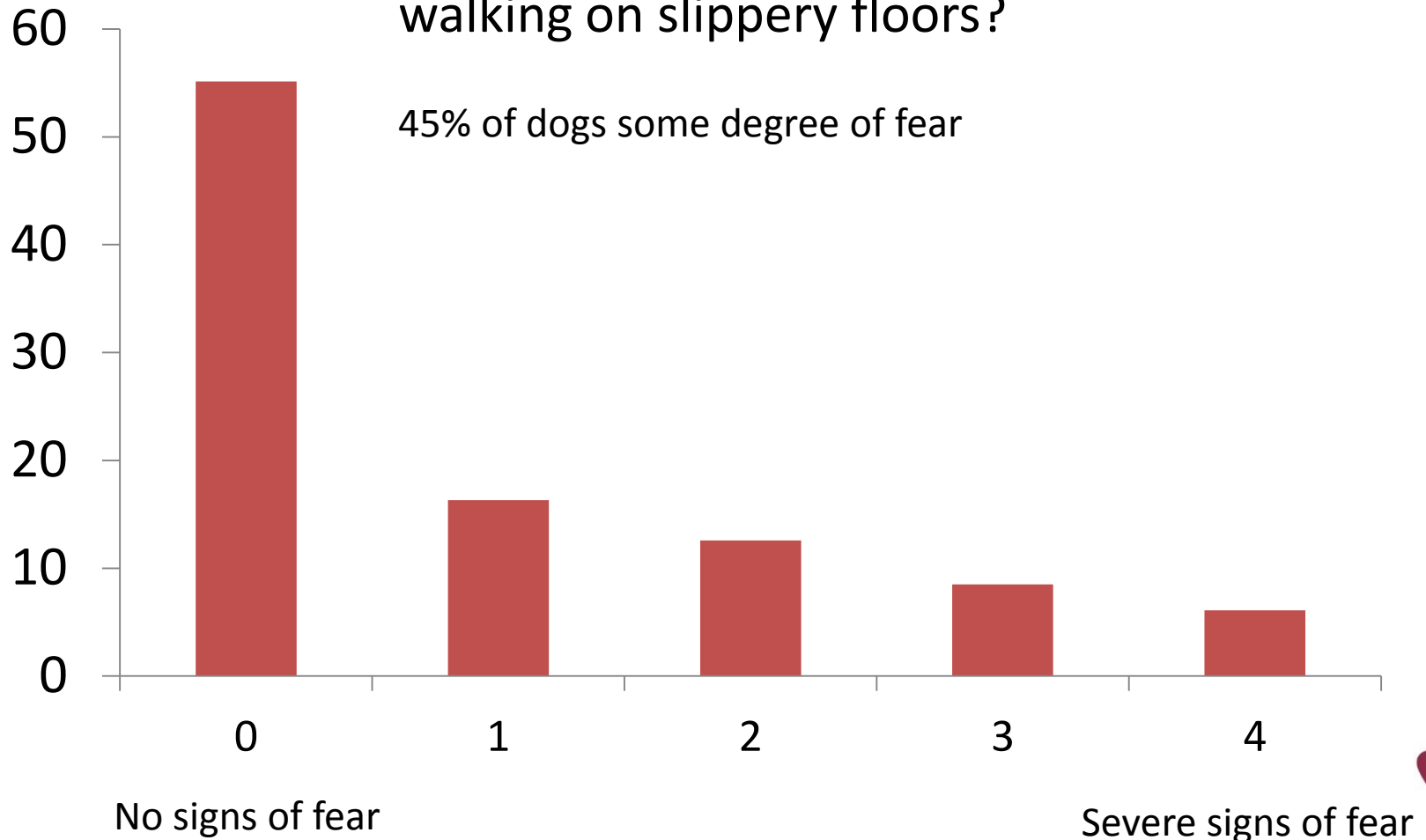
55% of dogs some degree of fear



Fear behaviour in Collies

Does your dog show signs of fear when walking on slippery floors?

45% of dogs some degree of fear



DMA vs. questionnaire

	Questionnaire			
DMA	Play interest	Non-social fear	Stranger directed fear	Stranger directed interest
Sociability	0.09	-0.13	-0.29	0.32
Curiosity/fearless.	0.15	-0.23	-0.14	
Playfulness	0.40		-0.10	0.07
Chase proneness	0.19			

Conclusions

- The DMA provides useful information that could be used in a more effective breeding evaluation for temperament in Collies.



Planned continuation

- Analyse questionnaire data in more detail to decide what traits from the DMA to include in a breeding index

