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# Companion Animal Research

7<sup>TH</sup> DECEMBER 2007





## Presentations

- ◆ **2.00** **Welcome / introduction**
  - Paul Hemsworth
- ◆ **2.05** **Kennel Enrichment: Physiological & behavioural effects on domestic dogs**
  - Mia Cobb
- ◆ **2.15** **Fear responses to humans in sheltered dogs:  
Effects of human contact and environmental enrichment during the 8-day isolation period**
  - Melanie Conley - (Presented by Paul Hemsworth)
- ◆ **2.25** **Behavioural assessment of shelter dogs over the 8-day quarantine period**
  - Cassie Pearton & Erin Rainey
- ◆ **2.35** **Development of a protocol for identifying dogs suitable for adoption**
  - Kate Mornement
- ◆ **2.45** **Personality and dogs (and other research)**
  - Jacqui Ley
- ◆ **2.55** **Young adults' beliefs about popular dog breeds**
  - Pauleen Bennett
- ◆ **3.05** **Improving human-dog relationships – the development of genetic markers for canine personality traits and behaviours**
  - Justyna Paplinska
- ◆ **3.15** **Afternoon tea – 15 mins**



## Presentations

- ◆ 3.30 **Understanding owner-induced canine obesity: An application of the theory of planned behaviour**
  - Vanessa Rohlf
- ◆ 3.40 **An analysis of dog obesity management**
  - Aislinn Guthrie Jones – (Presented by Ian Bland)
- ◆ 3.50 **Where do shelter cats come from? (Presentation available later)**
  - Linda Marston
- ◆ 4.00 **The effects of housing in a shelter environment on the welfare of domestic cats**
  - Sally Haynes
  
- ◆ 4.10 **Developing issues and priorities**
  - Paul Hemsworth - ALL



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# Kennel Enrichment

Physiological & behavioural effects on domestic dogs

Mia Cobb



THE UNIVERSITY OF  
MELBOURNE



MONASH University



Department of  
Primary Industries



## Outline

- ◆ Measure of physiological and behavioural effects of structured enrichment program on population of domestic dogs
- ◆ Assessment groups of 8-12 dogs:  
two treatment groups over 16 days
- ◆ Physiological measures:  
salivary cortisol, salivary IgA, blood (neutrophil: leukocyte ratios)
- ◆ Behavioural measures:  
temperamental assessment scores, CCTV in-yard and in-kennel
- ◆ Gather data on utilisation of passive enrichment items:  
kennel raised beds, toys, yard furniture/beds
- ◆ Examine if a relationship exists between results and  
assessment/GD success





## Update

- ◆ Animal ethics approval has been granted
- ◆ Secured partial funding to date; continuing to seek further support while project commences
- ◆ Data collection scheduled to commence 19<sup>th</sup> December 2007
- ◆ Challenges to date





# 2008

- ◆ Data collection to proceed throughout 2008
- ◆ Will result in data for over 100 individual dogs through Guide Dog assessment period
- ◆ Analysis and write up planned for 2009





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**Guide Dogs Victoria**  
Sharing the journey

# Questions?

Thanks to:





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## Fear Responses to Humans in Sheltered Dogs: Effects of Human Contact and Environmental Enrichment During the 8-Day Isolation Period

Melanie Conley (2007)  
The University of Melbourne



Department of  
Primary Industries



## Treatments

1. **Minimal human contact** (routine daily husbandry)
2. **Human contact** - experimenter squatted in pen for 2 min per day
3. **Human contact + 'Environmental enrichment'** - (2) above plus offering toys (rope and squeaky plush bone toys).



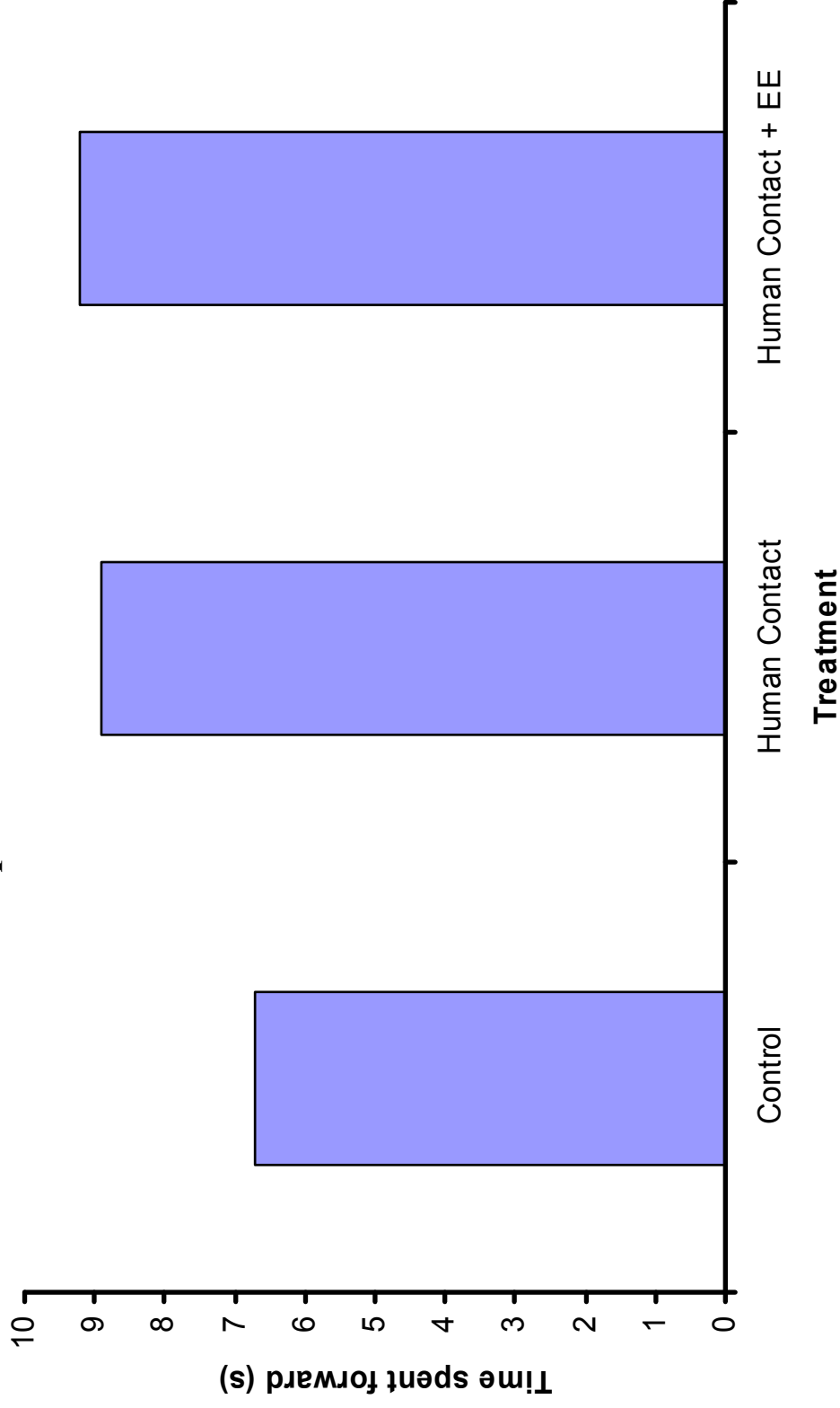
## Measurements

- ◆ Behavioural Test:
  - As experimenter approached, measured:
    - Time taken to withdraw
    - Time spent forward
- ◆ Saliva Sampling:
  - collected to assess the cortisol response to human handling



# Results

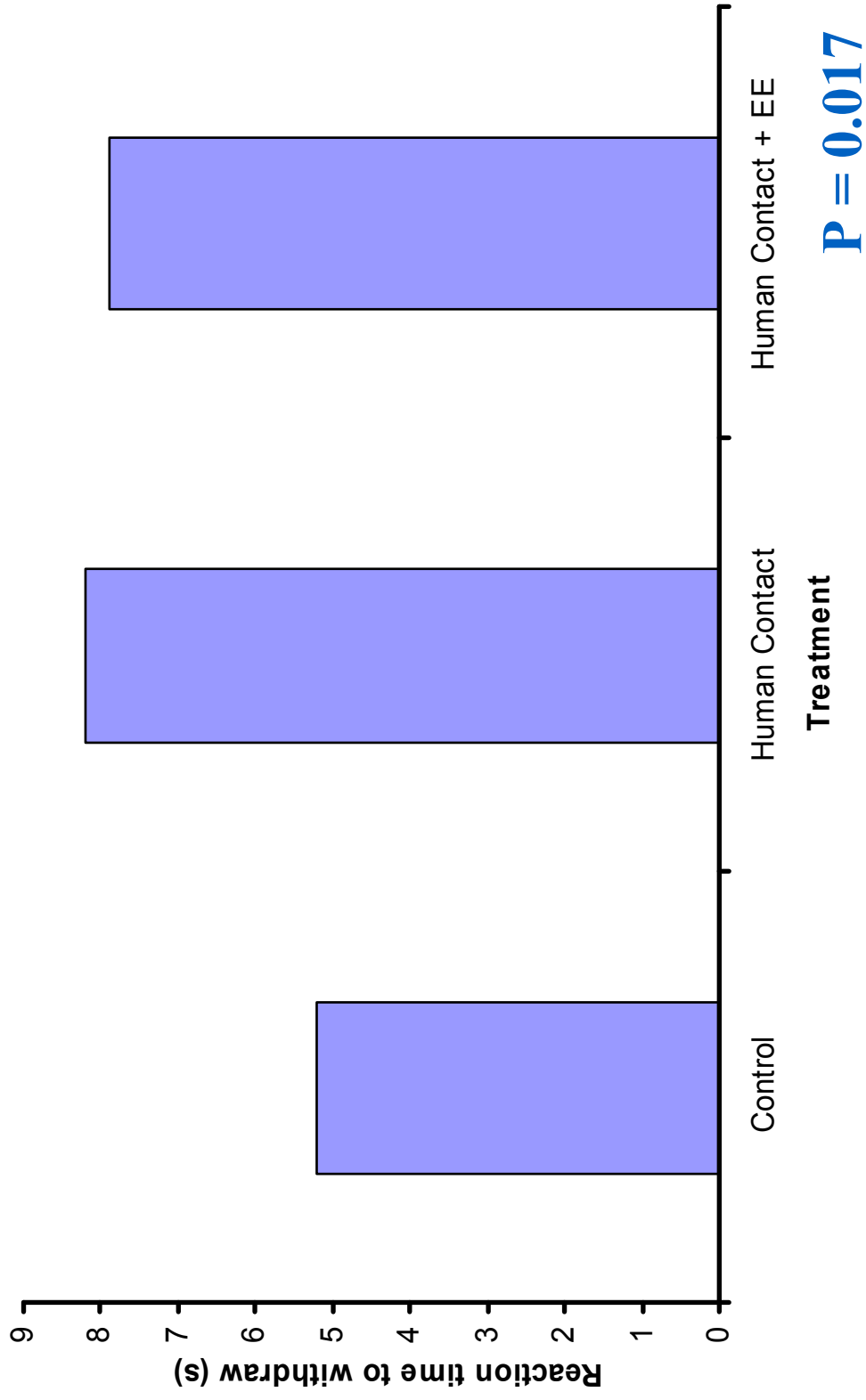
Time spent forward at Position 3





# Results

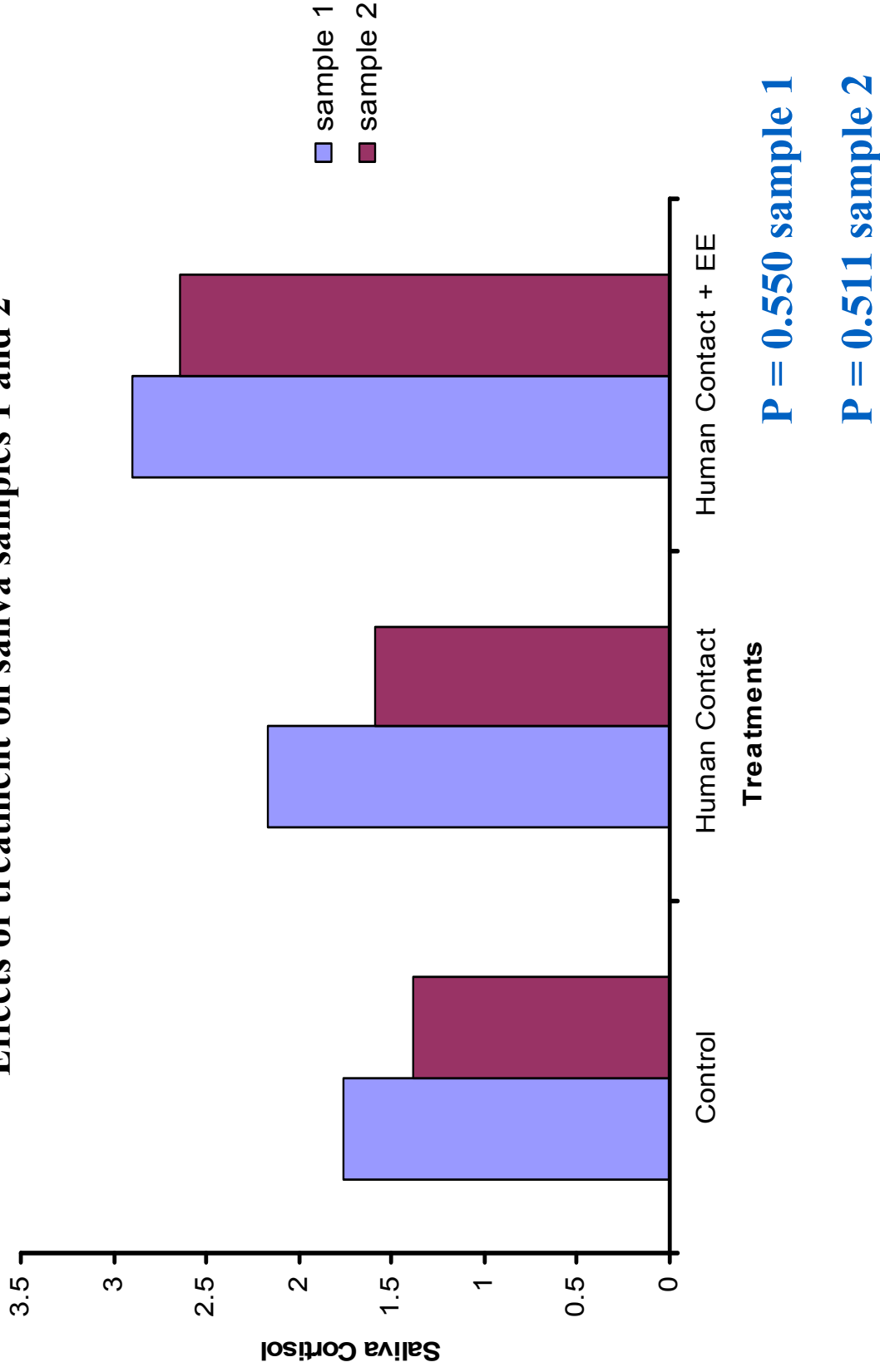
## Reaction time to withdraw at Position 3





# Results

## Effects of treatment on saliva samples 1 and 2





## Summary

- ◆ Control dogs are more fearful of humans compared to dogs that received additional human contact
- ◆ Physiological data were inconclusive. More research necessary on the methodology and effectiveness of using salivary cortisol concentrations to assess plasma cortisol.
  - There was no direct evidence linking a reduced fear response to the outcome of the behavioral assessment after the 8-day isolation period



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# Behavioural Assessment of Shelter Dogs Over the Eight Day Quarantine Period

Cassie Pearton and Erin Rainey  
The University of Melbourne





## Our Project:

- ◆ Made simple observations of dog behaviour within the shelter environment.
- ◆ Looked at behaviours exhibited over the eight day quarantine period.
- ◆ Attempted to assess if a relationship between behaviour during the eight day period and the outcome of a temperament assessment test after this period exists.



## Results: Location Effect

Behaviour	Location		P-Value
	VAA	LSAH	
Withdrawal	2.639	8.411	0.004
Howl/Cry	0.027	0.113	0.002
Pant	0.049	0.211	0.006

•only significant differences shown

**Note:** VAA – Victorian Animal Aid  
LSAH – Lort Smith Animal Hospital



## Results: Day Effect

	Day								
Behaviour	1	2	3	4	5	6	7	8	P- value
Lie	0.16	0.611	0.337	0.299	0.213	0.415	0.089	0.08	0.009
Withdrawal	6.278	13	6	8.313	0.25	3.333	6.028	1.5	0.029
Pant	0.22	0.038	0.058	0.036	0.428	0.083	0.056	0.125	0.012
Shake/Tremble	0	0.035	0.009	0	0.113	0	0.21	0	0.022

\* only significant differences shown



## Results: Correlations between Day & Behaviour

Behaviour	R	P-value
Stand	0.327	0.003
Lie	-0.313	0.005
Withdrawal	-0.197	0.08
Bark	0.27	0.016
Jump/Rear	0.239	0.033

\* only significant correlations shown



## In summary...

- ◆ Dogs at LSAH were significantly more withdrawn and spent more time howling/crying and panting.
- ◆ Withdrawal score and proportion of time spent lying decreased as time spent in the shelters increased.
- ◆ Standing, barking and jumping/rearing all increased the longer the dogs remained in the shelters.
- ◆ Found no significant relationship between any behaviour observed in the eight day quarantine period and the outcome of the temperament assessment test.



## Future Research

- ◆ Implementation of enrichment strategies during first 2-3 days after shelter admission to reduce fear and stress associated with sudden exposure to new environment.
- ◆ Emphasis on human-dog interactions.
- ◆ Larger study with more dogs and more shelters.



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# Development of a protocol for identifying dogs suitable for adoption

Kate Mornement - PhD Candidate

Supervisors:

Dr. Pauleen Bennett, Prof. Grahame Coleman, Dr. Samia  
Toukhsati





## Background

- ◆ Dog ownership is popular in Australia – 40% of households
- ◆ Dogs that display undesirable behaviours are more likely to be surrendered to shelters (Miller et al 1996)
- ◆ Shelter dogs undergo a behavioural assessment (or “temperament test”)
  - Theoretically, such tests should provide an accurate profile of the behavioural characteristics of a dog (van de Borg et al 1991)
- ◆ A valid assessment is essential to protect the welfare of shelter dogs and the community



## Introduction

- ◆ Aim - to develop a scientifically validated and standardised assessment protocol to determine adoption suitability in dogs
- ◆ Two part study
  - Part 1: A review of assessment protocols currently used to determine adoption suitability
  - Part 2: Development and implementation of the Behavioural Assessment for Re-homing K9s (B.A.R.K.) protocol





## Method

- ◆ Part 1: Review of existing behavioural assessment protocols
  - Literature review
  - Observation of assessment protocols
    - 8 shelters, in 5 states (VIC, NSW, QLD, ACT & SA)
    - Video recorded/Protocol paperwork collected
  - Interviews with assessment staff
    - Telephone/in person
    - 12 questions
      - Attitudes and beliefs about behavioural assessment
      - Details about their existing protocol
      - Dog demographics
  
- ◆ Part 2: Development and implementation of the B.A.R.K. protocol
  - BARK protocol based on results of Part 1 & advisory group
  - Implementation into several shelters for validation/data collection



# Results of Part 1

- ◆ Literature review
  - Lack of standardisation in content & methodology
  - Very few peer reviewed, those that do appear in the scientific literature have incomplete reports of reliability and validity (Taylor & Mills 2006), which are 'key components that determine a worthwhile assessment of behaviour' (Bateson 1993)
  
- ◆ Observation of assessments in Australian shelters
  - >50 assessments observed using 8 different protocols
  - No statistical analyses due to high variability in content, methodology, duration and lack of standardisation
    - Duration ranged 5 to 40 minutes



## Results of Part 1

- ◆ Interviews with assessment staff (n = 26)
  - Experience ranged from 6 months to 16 years (mean = 2.5 years) and was not correlated with:
    - Confidence in current protocol ( $r = -.37$ ,  $n = 26$ ,  $p = .064$ ).
    - Confidence in their ability to accurately assess shelter dogs ( $r = -.19$ ,  $n = 26$ ,  $p > .05$ ).
  - 77% received training in assessing dogs, 23% did not
    - On the job training (59%)
    - Seminar/course (33%)
  - 85% thought their current protocol could be improved
    - Expand to assess more behaviour (19%)
    - More time (16%)
    - More training (13%)
    - Two people present, more standardised protocol (6%)



## What next? ...Part 2

- ◆ Finalization of the protocol at next Advisory Group meeting
- ◆ Implementation into shelters (subject to AEC clearance)
- ◆ Data collection & analysis (n=150?)
  - Reliability
    - Test-retest
    - Inter-rater
  - Validity
    - Concurrent
    - Face
    - Predictive
  - Feasibility
    - Is the protocol practical for use in shelters/pounds?



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Thankyou!





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# Personality and Dogs

and other Research  
Jacqui Ley

Pauleen Bennett





## The MCPQ-R

- ◆ Questionnaire for describing canine personality using five dimensions
  - Extraversion, Motivation, Training Focus, Amicability and Neuroticism
- ◆ Adjective based
- ◆ Validated and Reliable
- ◆ In theory, can be used with any dog





## Identification of factors influencing the breeding of companion dogs in Victoria, Australia

- ◆ Small study to identify what factors influence dog breeders' decisions.
- ◆ Funded by PIAS.
- ◆ Phone survey of people advertising puppies for sale in local trading paper.
- ◆ Basically no difference between Dogs Victoria Breeders and Non-Dogs Victoria Breeders.





## So what makes a good dog good?

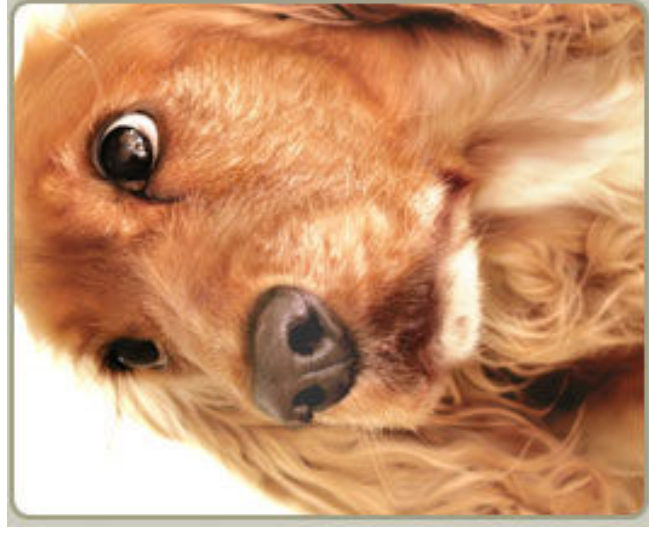


- ◆ Combine several of the instruments developed by this group and others to identify predictors of an attached, satisfied dog-owner relationship.
- ◆ Results will allow generation of
  - Breed profiles
  - Better advice for potential owners for selecting a type of dog and an individual dog



## So what makes a good dog good?

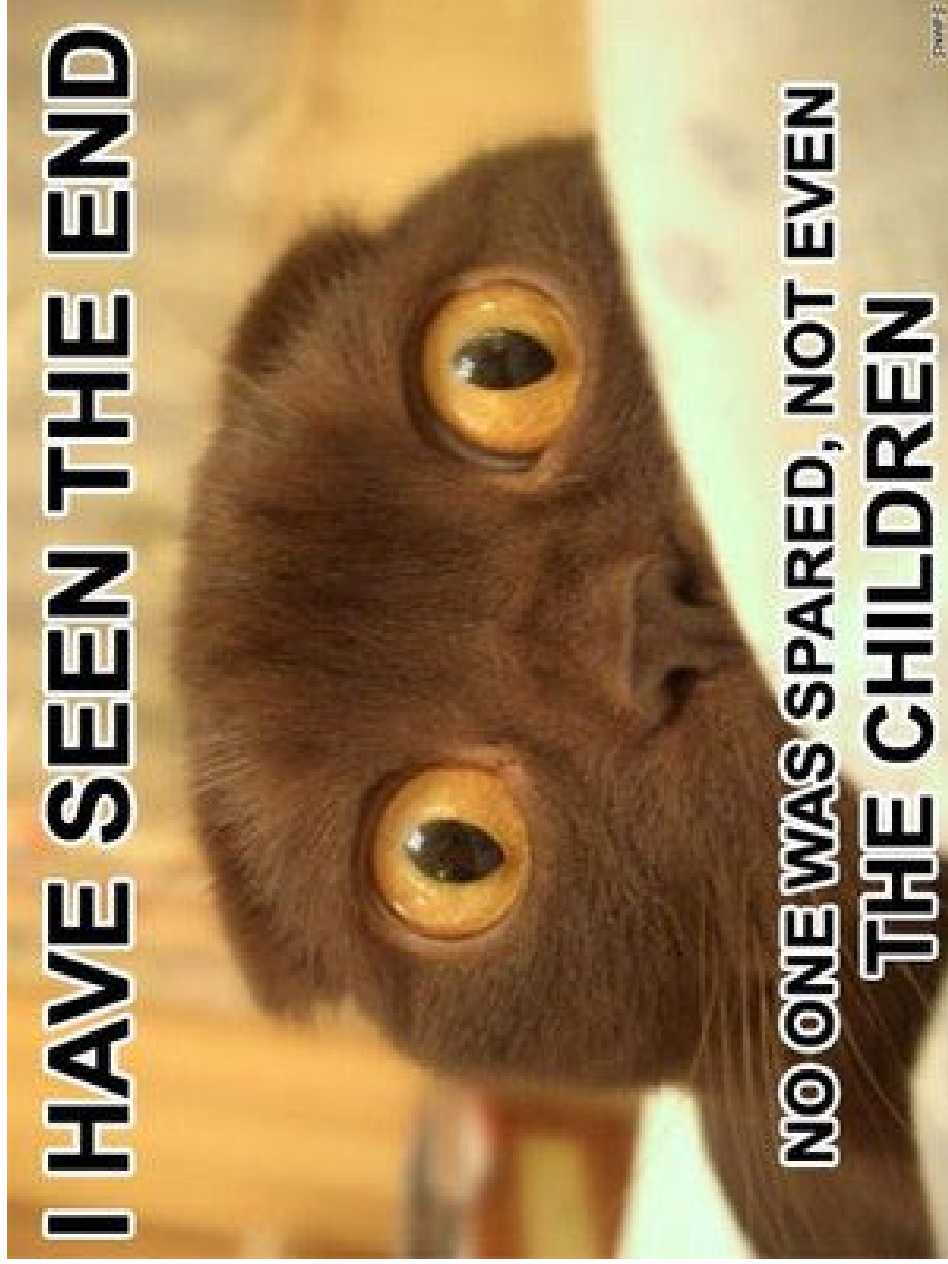
- ◆ M-DORS
- ◆ Ness' questionnaire
- ◆ C-BARQ- James Serpell
- ◆ MCPQ-R
- ◆ On-line data collection
  - Very useful in previous studies
- ◆ Funding from PIAS





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The End





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# Young adults' beliefs about popular dog breeds

Anthrozoology Research Group

Monash University





## Background

- ◆ Advice is to buy a purebred dog because adult characteristics are more predictable
- ◆ Requires assumption that potential dog owners can (and will) access relevant knowledge

## Research questions

- ◆ Can young adults identify common dog breeds?
- ◆ What are their beliefs about different breeds?



## Methodology

- ◆ 28 pages, each with a 5 cm photo of a popular dog breed
- ◆ Participant required to select breed name from among five choices
- ◆ Also asked to indicate how familiar they were with the breed
- ◆ Then asked to rate breed on 14 statements, from strongly disagree (-2) to strongly agree (+2)
- ◆ 250 first year psychology students





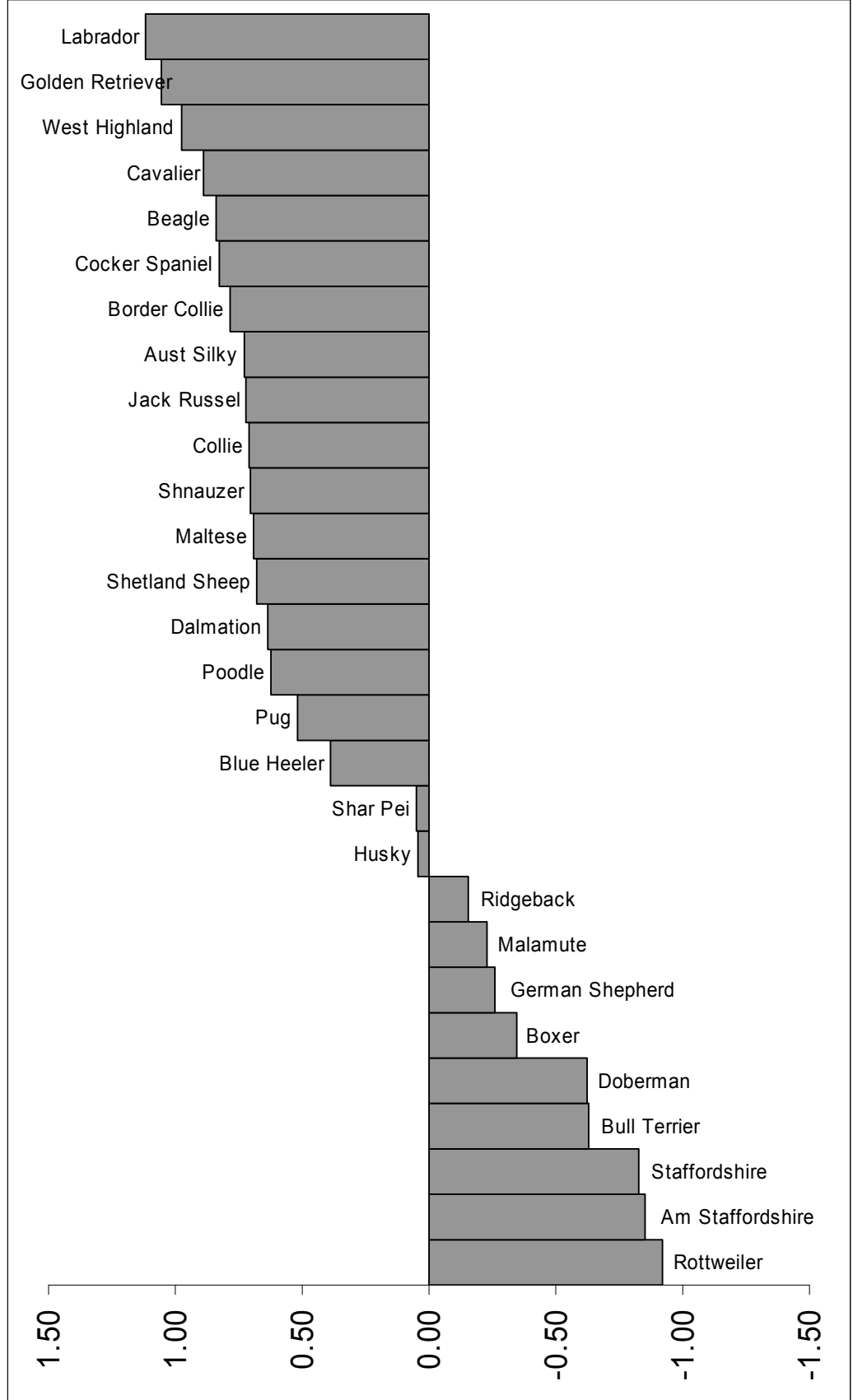
# Breed familiarity

Dog Breed	Respondents who correctly identified the breed (%)	Dog Breed	Respondents who correctly identified the breed (%)
<i>Dalmation</i>	99.2	<i>Cavalier King Charles Spaniel</i>	61.6
<i>Poodle (toy)</i>	97.2	<i>Australian Cattle Dog</i>	60.2
<i>German Shepherd</i>	92.3	<i>Schnauzer (miniature)</i>	55.9
<i>Pug</i>	89.8	<i>Shar Pei</i>	50.2
<i>Golden Retriever</i>	88.3	<i>Australian Silky Terrier</i>	49.2
<i>Boxer</i>	81.6	<i>Bull Terrier</i>	49.0
<i>Rottweiler</i>	81.0	<i>Rhodesian Ridgeback</i>	49.0
<i>Labrador</i>	80.4	<i>Alaskan Malamute</i>	42.0
<i>Jack Russell Terrier</i>	76.2	<i>Cocker Spaniel</i>	40.7
<i>Beagle</i>	75.4	<i>Staffordshire Bull Terrier</i>	40.7
<i>Border Collie</i>	68.7	<i>Collie (rough)</i>	35.4
<i>West Highland White Terrier</i>	64.5	<i>Maltese Terrier</i>	35.4
<i>Husky</i>	62.2	<i>American Staffordshire Terrier</i>	25.4
<i>Doberman</i>	61.8	<i>Shetland Sheepdog</i>	24.1



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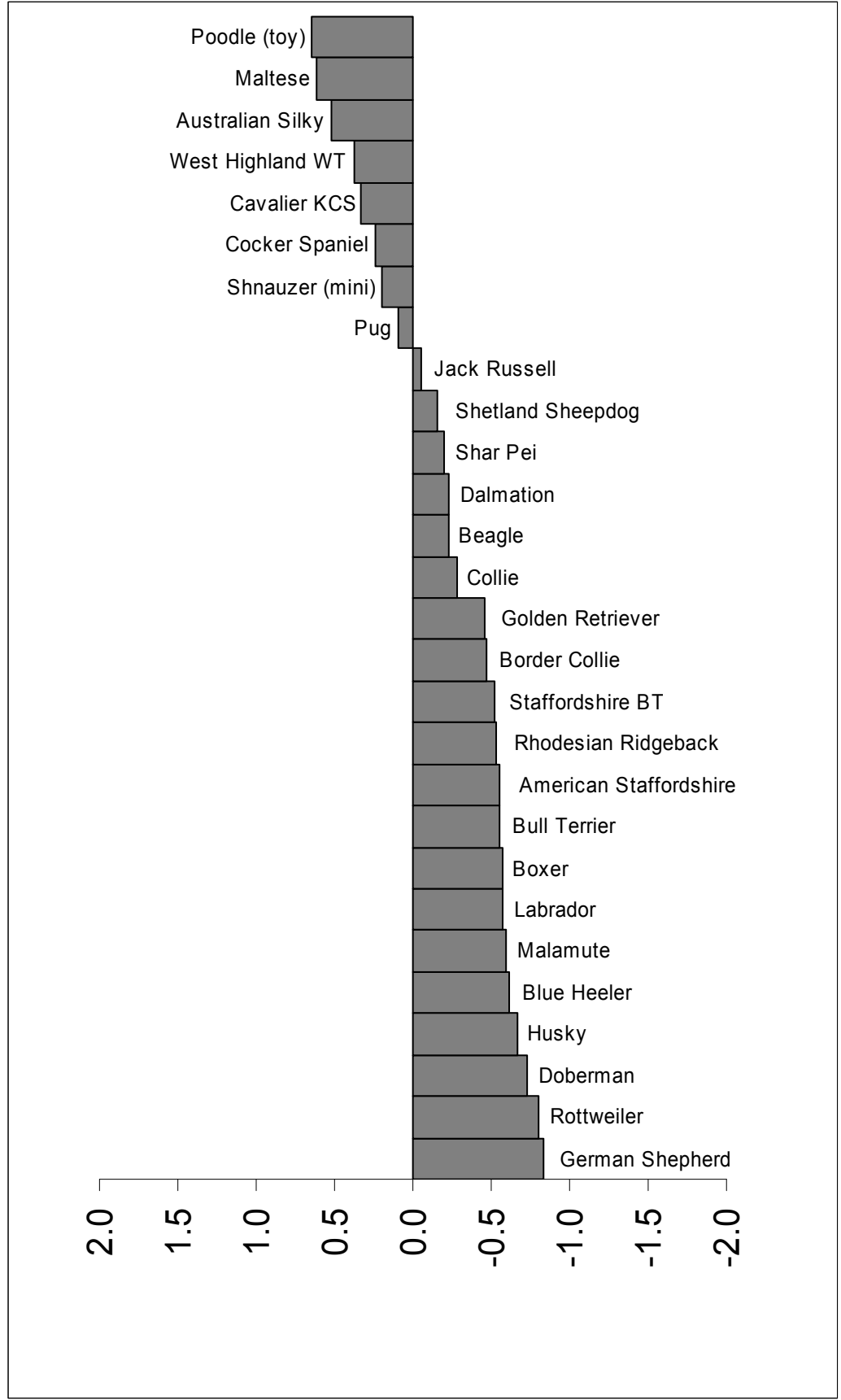
# Dogs of this breed are generally safe with children





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# Dogs of this breed are generally fearful in new situations

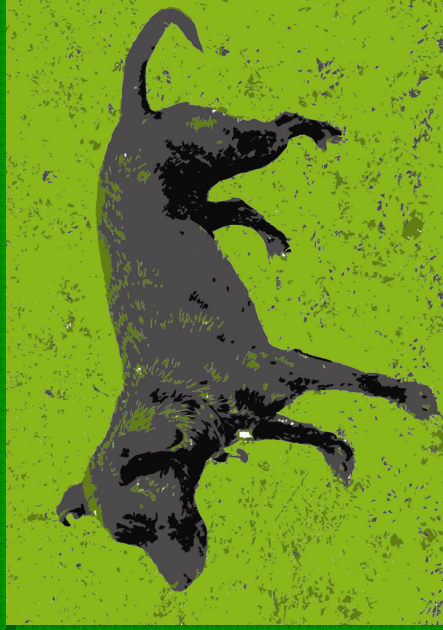




## Conclusions

- ◆ Young adults are much better at recognizing some common dog breeds than others
- ◆ Young adults believe different things about different breeds
- ◆ Do these beliefs influence acquisition behaviour?
- ◆ Are the breed stereotypes accurate?

Improving human-dog  
relationships – the development  
of genetic markers for canine  
personality traits and behaviours






Develop genetic markers to predict canine personality traits and behaviours.



Personality traits and behaviours chosen will be those that promote owner-dog bonding.



Dogs tested for behaviours reported to influence success as companion and working dogs and swabbed for DNA.



Owners fill out questionnaires to measure owner-dog bonding and canine behaviour.



Determine which behaviours and personality traits predict strong owner-dog bonding.

## Methods




Measure heritability of chosen behaviours/ personality traits.



Identify regions of the genome associated with those behaviours/ personality traits.

## Methods

 Identify candidate genes within those regions which may influence behaviour/ personality and design genetic markers.

 Test markers on dogs to see if they predict behaviour/ personality.



Behaviour/ personality are very important to successful recruitment of service dogs and retention of companion dogs.



Improving success rate of training service dogs saves resources – especially important for e.g. Guide Dogs Australia or Seeing Eye Dog Association.



**Increasing retention of companion dogs decreases the number of dogs returned to shelters and euthanized.**



**Decreasing rejection of dogs by owners decreases stray and feral dogs – health, environmental and conservation benefits.**



Predicting adult behaviour from an early age an advantage.

---



Most dog owners acquire dogs when they are puppies and training for service roles begins at young age.




Can minimise dog-owner mismatches and wastage of resources on training unsuitable dogs for service roles.



Puppy temperament tests not good for predicting adult behaviours.



A behavioural test based on genetics could be applied from the earliest stage of the life cycle.



Will improve selective breeding for specific behaviours.



**This grant will be a collaboration between the Anthrozoology Research Group, Department of Psychology, Monash University and Genetic Technologies Ltd (GTG).**



**International collaboration with Prof. Katherine Houpt and Dr. Anna Kukekova from College of Veterinary Medicine, Cornell University.**



**The genetic test will be available from GTG once developed.**



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# Understanding owner-induced canine obesity: An application of the theory of planned behaviour

*Vanessa Rohlf, Pauleen Bennett, Samia Toukhsati and Grahame Coleman.*



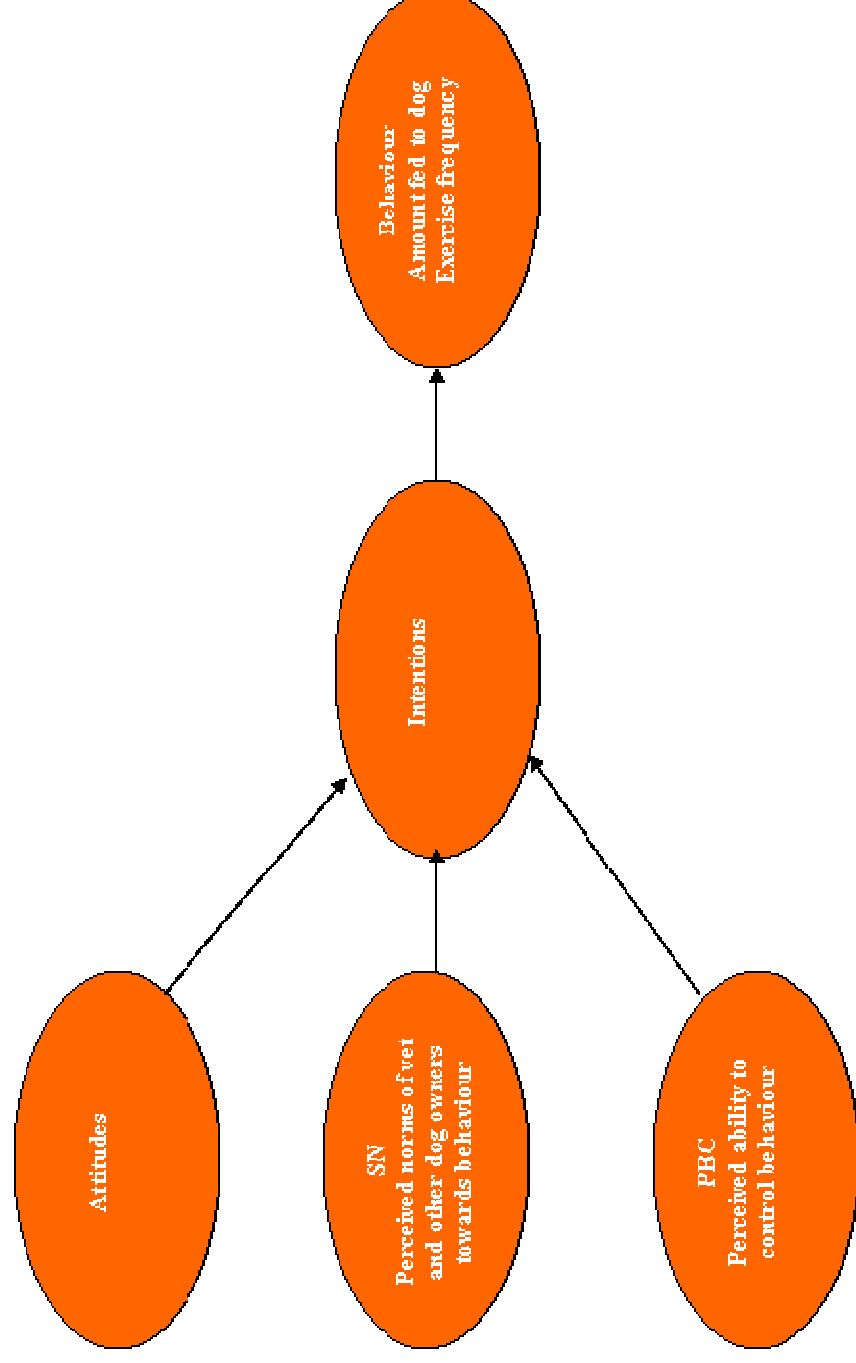


## Background

- ◆ Canine obesity is a common nutritional disorder affecting up to 40 per cent of the pet dog population.
- ◆ Obesity is commonly lifestyle induced. Owners feed their dogs too much and provide inadequate amounts of exercise.
- ◆ Treatment for obesity is a major challenge for both the owner and veterinary staff.
- ◆ It is therefore important to identify attitudes that underpin feeding and exercise behaviours so that these may be targeted in an intervention program



# The Theory of Planned Behaviour





## Objectives

- ◆ To use the TpB to identify the determinants of owners intentions to feed the appropriate amount to their dogs and to exercise their dog the appropriate number of times per week.

## Method

- ◆ A questionnaire to assess the constructs of TpB was developed using information gained from a literature review, four focus groups and a pilot study.
- ◆ The final version was distributed among dog owners recruited from vet clinics, dog clubs and community events within Metropolitan Melbourne. A total of 183 participants completed and returned the questionnaire



## Findings

- ◆ The Tpb model predicts owners' intentions to feed. Owners' perception of control made a unique contribution to the model.

Table 1. Linear multiple regression of variables predicting intentions to feed appropriate amount

	Beta	t	Sig.
(Constant)		5.32	.00
Overall, how much control do you feel you have over the amount you feed	.26	2.79	.01

F(12, 152) = 4.89, p = .00, Adjusted R<sup>2</sup> = .222

- ◆ The Tpb model also predicts owner's intentions to exercise. Owners' perception of control made unique contributions to the model.
- ◆ Attitudes towards the importance of exercising the dog also made a unique contribution to the model.

Table 2. Linear multiple regression of variables predicting intentions to exercise appropriate no. of times a week

	Beta	t	Sig.
(Constant)		2.36	.02
Don't exercise dog freq b/c no time	-.34	-5.00	.00
Exercise freq is important	.28	3.86	.00
Overall, how much control do you feel you have over the no. of times a week you exercise your dog	.15	2.38	.02

F(11, 158) = 15.64, p = .00, Adjusted R<sup>2</sup> = .488



## What's next?

- ◆ Treatment of owner-induced canine obesity should involve modifying owners' attitudes towards feeding and exercise and owners' perceptions of their ability to control how much they feed and how often they exercise their dog.
- ◆ An intervention program based is scheduled to begin in February 08 within four veterinary clinics.
- ◆ It is anticipated that a relationship between TpB constructs, feeding and exercise behaviours and obesity may be found if the intervention program leads to significant weight loss in obese canines.



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# An Analysis of Dog Obesity Management

Aislinn Guthrie-Jones  
Bachelor of Animal Science and Management  
The University of Melbourne  
Victoria, Australia  
©2007





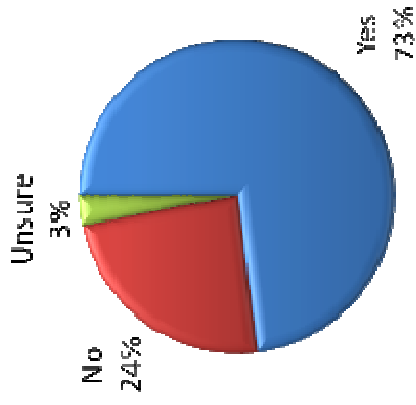
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# Dog Obesity

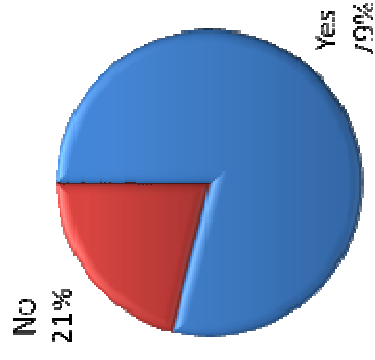




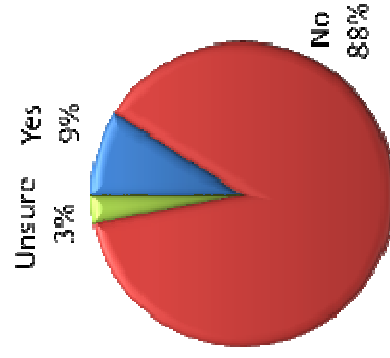
# Weight Monitoring



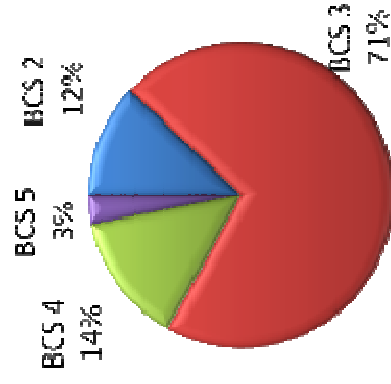
(a) Monitor their dogs weight?



(b) Know your dogs weight?



(c) Is your dog overweight?

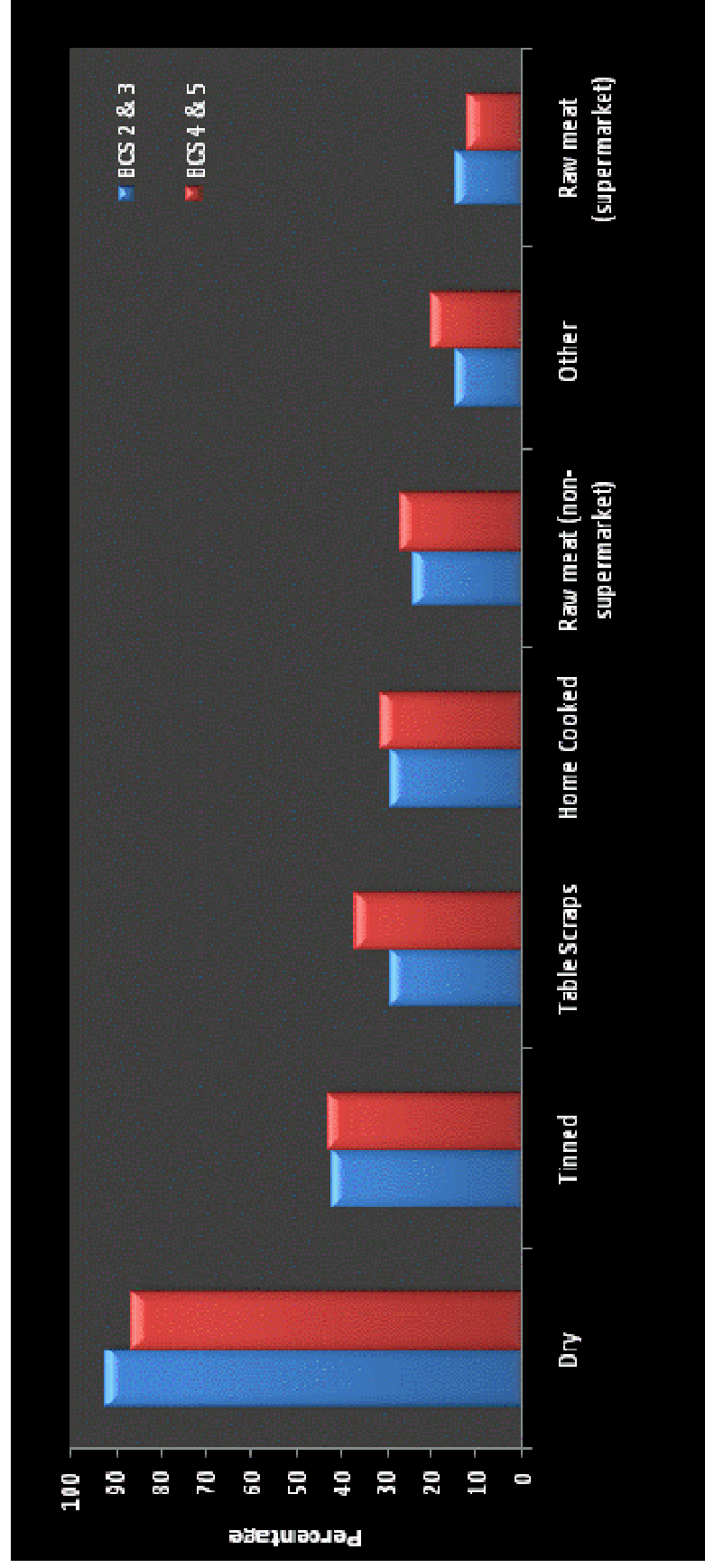


(d) Body Condition Score



# Feeding

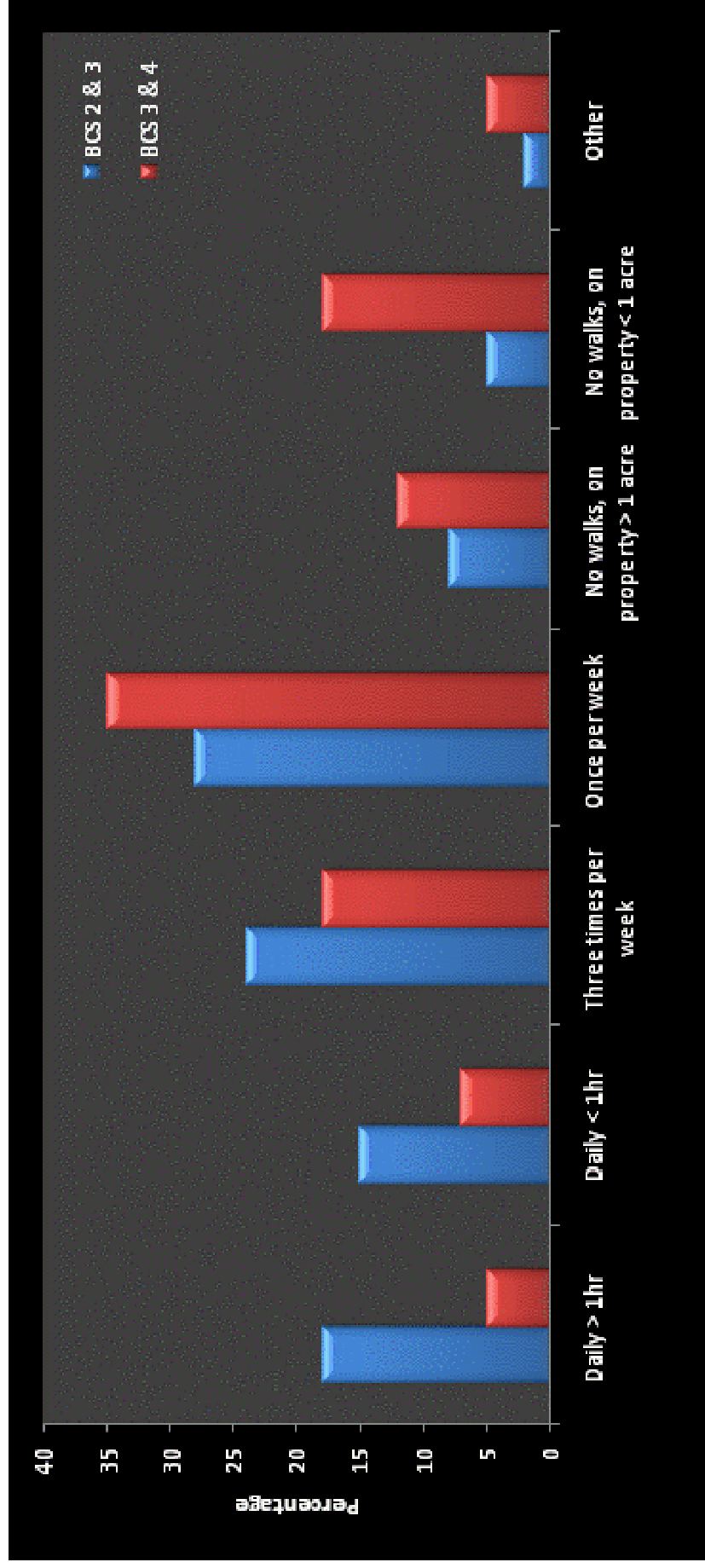
Quantifiable Nutrient Composition:





# Exercise

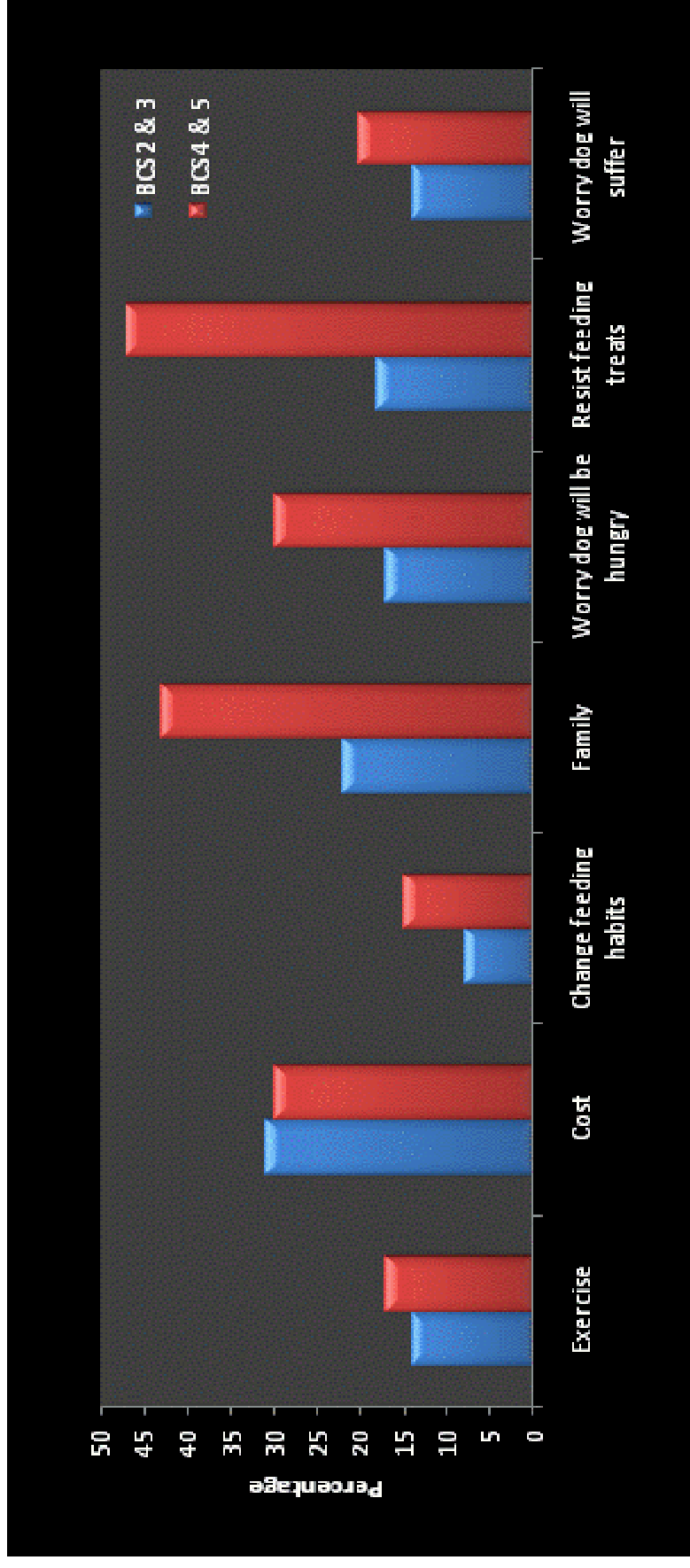
Exercise Frequency:





# Owner - Following a Dog Weight-loss Plan

Comparison of dog owners response between the two BCS categories for:  
'Yes – Limits ability to follow a weight-loss plan'





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## The Effects of Housing in a Shelter Environment on the Welfare of Domestic Cats (*Felis silvestris catus*)

Sally Haynes

The University of Melbourne

Supervisor: Professor Paul Hemsworth

Mentor: Dr David Berry



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## Aims/Hypotheses



- Examine the temporal change in postures and behaviours of cats that are indicative of adaptation to the shelter environment
- Determine the effectiveness of the Cat Stress Score (CSS) as an integrated behavioural measure
- Determine whether postures, behaviours and CSS predict outcome
- It was hypothesised that cats housed in room 1 would demonstrate adaptation over time and cats housed in room 2 would display more adaptive behaviours than cats in room 1.



## Changes in Posture/ Behaviour Over Time

Posture/Behaviour	Time		p-value
	Period 1	Period 2	
<b>Lying</b>	More	Less	0.051
<b>Standing</b>	Less	More	0.001
<b>Care-soliciting</b>	Less	More	0.033
<b>Feeding</b>	Less	More	0.012

- Cats observed during period 2 displayed more activity and a wider range of behaviours than those in period 1
- Adaptation over time



## Changes in Posture/Behaviour with Neuter Status

Posture/Behaviour	Status		p-value
	Entire	Neutered	
<b>Lying</b>	Less	More	0.016
<b>Sitting</b>	More	Less	0.007
<b>Lying half-on-side</b>	Less	More	0.034
<b>Eyes normal open</b>	More	Less	0.009
<b>Eyes normal dilation</b>	More	Less	0.034
<b>Comfort behaviours</b>	More	Less	0.055

- Entire cats displayed more activity and a wider range of behaviours when compared to neutered cats
- Entire cats may be more likely to be semi-owned and thus adapt more quickly



## Cat Stress Score

CSS	Period		p*	Neuter Status		p*
	1	2		1	2	
<b>Observation 1</b>	2.83	2.69	.426	2.56 <sup>a</sup>	2.95 <sup>b</sup>	.030
<b>Observation 6</b>	2.82	2.63	.232	2.75	2.70	.779

\*Within rows, significant differences are indicated by different superscripts:  
<sup>ab</sup> =  $p < 0.05$ , <sup>cd</sup> =  $p < 0.01$ , <sup>ef</sup> =  $p < 0.001$

- The CSS appeared to underestimate the significance of inactivity when evaluating welfare



## Welfare Implications & Future Research

- Adaptation occurs within 6-8 days
- High incidence of cat flu & euthanasia
  - may indicate suppressed immune system as a result of chronic stress
- Hiding: may be an important coping behaviour
- Human contact: may moderate the stress response