

**Behavioural ecology group**  
[www.bhe.wur.nl](http://www.bhe.wur.nl)  
 Bonne Beerda, BHE (behavioural ecology)

<http://www.bhe.wur.nl>

**Behavioural Ecology Group**  
 The Behavioural Ecology Group (BHE) studies the evolution and development of animal behaviour and the effects of social context on behaviour. We provide education in Behavioural Ecology and Applied Animal Behaviour.

**Head of BHE Group**  
 Dr. Bonne Beerda

**Research**  
 Communication in the Third Dimension  
 How animals use the large spatially complex 3D world and how they interact with it.

**BSc**  
**BHE202034** Animal Behaviour  
**HAP21806** Behavioural Endocrinology  
**BHE50306** Life history Evolution

**MSc**  
**YAS32306** Companion Animals  
**ADP30306** Health Welfare and Management  
**BHE31306** Applied Animal Behaviour and Welfare  
**BHE30306** Behavioural Ecology

**Other courses (incl. behaviour) -**  
**YAS10806** Biology Animal Production,  
**YAS60312** Research Master Cluster,  
**YAS80312** BSc Thesis,  
**ADP30806** Adaptation Physiology

**WAGeningen**  
 UNIVERSITY & RESEARCH

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**Behavioural ecology group research topics**

**Personality**

**Sociality**

**Quality of life**

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**Personality - stress**

Coping strategies  
 Stress  
 Stress-related behaviour

**Hierarchical organization of personality traits**  
 Conflict behaviours – signals of arousal or emotional valence

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## History Big Five (Five Factor Model)

Lexical hypothesis; sampling language to produce a taxonomy of human personality traits (Francis Galton)

Allport G. and Odbert S. (1936) - 4,504 adjectives from dictionaries




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Openness (open to experience, intellectually curious - cautious)

Intellect and Openness, heritability 57%

Conscientiousness (organized and efficient - careless and easy-going)

Industriousness and Orderliness, heritability 49%

Extraversion: (energetic and outgoing - reserved and solitary)

Enthusiasm and Assertiveness, heritability 54%

Agreeableness: (friendly and cooperative - detached and antagonistic)

Compassion and Politeness, heritability 42%

Neuroticism: (nervous - confident and emotionally stable)

Volatility and Withdrawal, heritability 48%

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## Personality (self) assessment

<http://www.dierenwetenschap.com/>  
Onderzoek/Practical

<http://survey.dierenwetenschap.com/surveymobile.aspx?surveyid=11f98ffe-dbf7-4a64-919f-162d82c5ba0a>

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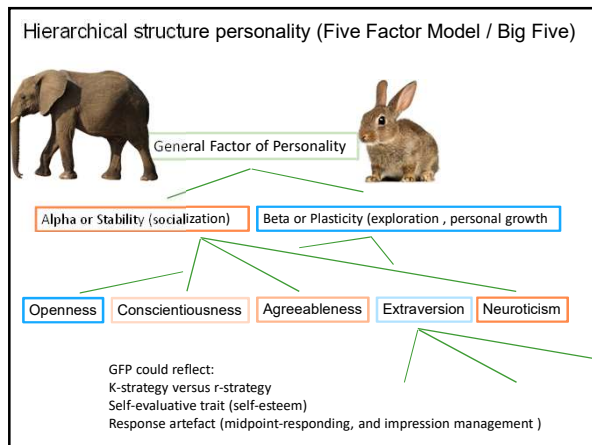
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	Items	Sample N	mean	SD	%   0-4 scale	
			[1-5]			
Openness	7	523	28.02	4.8	75	
Conscientiousness	10	523	34.76	7.13	62	
Extraversion	9	523	28.14	7.45	53	
Agreeableness	7	523	28.22	4.08	76	
Neuroticism	8	523	22.22	6.9	44	

Gender		
Men	136 (25.9%)	
Women	388 (74.0%)	
Unanswered	19 (3.6%)	
Age		
Modal age group	16-20 (19.9%)	
Age range	16-72	
Unanswered	0	
Location		
USA	220 (42.1%)	
UK	105 (20.1%)	
Other	196 (37.4%)	
Unanswered	2 (0.4%)	
Route to participation		
Followed link from another site	219 (41.9%)	
Doing as part of some class	119 (22.8%)	
Found through search engine	102 (19.5%)	
Got link from a friend	31 (5.9%)	
Other	47 (9.0%)	
Unanswered	5 (1.0%)	
Highest level of education		
Primary Education	18 (3.4%)	
Secondary Education	103 (19.7%)	
Vocational/Technical college	48 (9.2%)	
Some college/University	136 (25.9%)	
College/University Graduate	121 (23.1%)	
Some Postgraduate	55 (10.5%)	
Postgraduate/Professional Degree	42 (8.0%)	
Unanswered	6 (1.1%)	
Occupation		
Employed for Wages	225 (43.0%)	
Self-employed	46 (8.8%)	
Unemployed	34 (6.5%)	
Home-maker	17 (3.3%)	
Student	159 (30.4%)	
Retired	11 (2.1%)	
Unable to work	13 (2.5%)	
Unanswered	14 (2.7%)	



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### Stress & Personality

impatient		patient
time-conscious		relaxed
status sensitive		easy-going
competitive		
hostile		
aggressive		
"incapable" of relaxation		

**Stress** the consequence of a failure to respond adequately to mental, emotional or physical demands; actual or imagined



### Signs

Building on work of Claude Bernard, and Walter Cannon (1915, Emergency theory - adrenaline)

**Hans Hugo Bruno Selye** (1907-1982);

General response of swelling adrenal cortex, atrophy immune organs, ulcers

**General Adaptation Syndrome** (alarm, resistance, "exhaustion")

Selye; from GAS to Pathology



cold stress symptoms at 2 d, wk and mo




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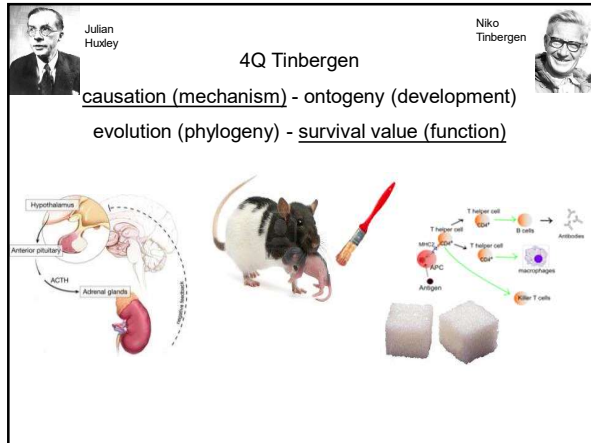
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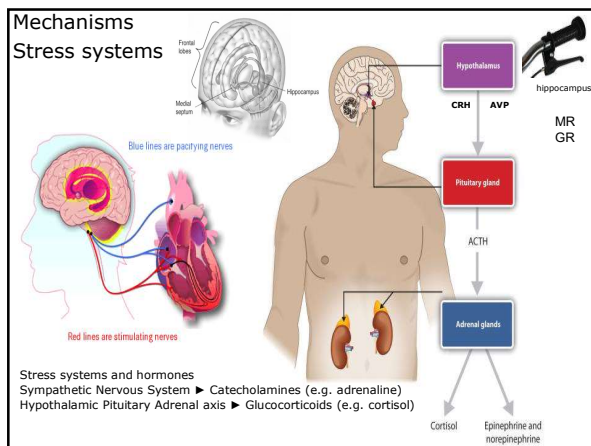
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Coping strategies

Defensive burying      Back test



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Coping strategies



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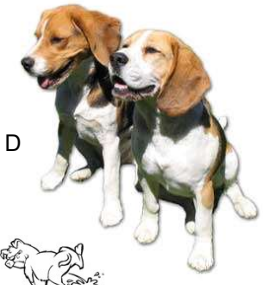
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Hawk / bold / proactive versus Dove / shy / reactive

Corson and Corson; (Anti)Diuretic dogs



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Vasopressin  
antidiuresis  
polypnea  
salivation  
tachycardia  
+ oxygen consumption



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Is your pet ever ...?



Primary		Secondary	
Joy	99	Jealous	81
Affection	97	Guilt	74
Curiosity	94	Empathy	64
Interest	94	Pride	58
Fear	93	Shame	51
Sadness	87	Grief	49
Surprise	82	Disgust	34
Anxiety	77	Embarrass	30
Anger	65		
	88		55

n=337 dog owners

Morris P.H., Doe C., and Godsell E., 2008. Secondary emotions in non-primate species? Behavioural reports and subjective claims by animal owners. Cognition & Emotion, 22:1, 3-20

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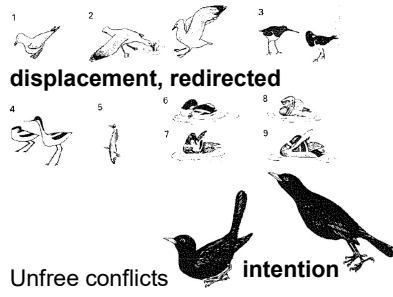
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Conflict, aggression behaviours

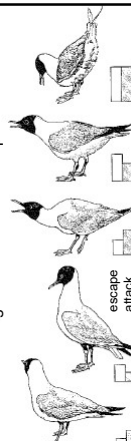


displacement, redirected

Unfree conflicts (stereotypes, damaging, apathy)

intention

ambivalent



agonistic = attack + escape

escape

attack

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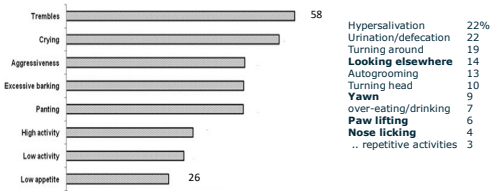
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Mariti C., Gazzano A., Lansdown Moore J., Baragli P., Chelli L., Sighieri C., 2012. **Perception of dogs' stress by their owners.** *Journal of Veterinary Behavior* 7, 213-219

Behaviours identified to indicate stress (1,190 dog owners)



### The more subtle signs are missed



## Anxiety (neuroticism) assessment in dogs

## What to measure?

<http://www.dierenwetenschap.com/>  
Onderzoek/Practical



## Open field test dogs

[https://www.youtube.com/playlist?list=PLm5F3xJVQ85kINBMwr8N0iU05K7Rut\\_ng](https://www.youtube.com/playlist?list=PLm5F3xJVQ85kINBMwr8N0iU05K7Rut_ng)

Submit your scores at

Submit your scores at  
<http://survey.dierenwetenschap.com/surveymobile.aspx/Dog>

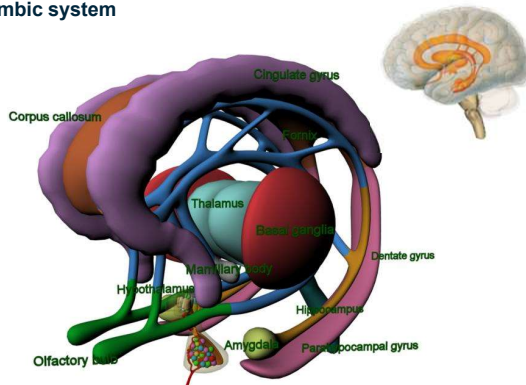
Collect results at

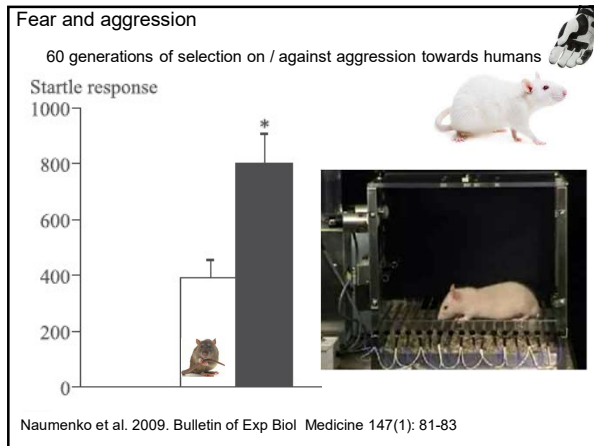
<http://survey.dierenwetenschap.com>

Practicum, Honden\_1

Select survey PracticumDW, menuoption: Results>Data export, at bottom of page use: [Export CSV]

## Limbic system






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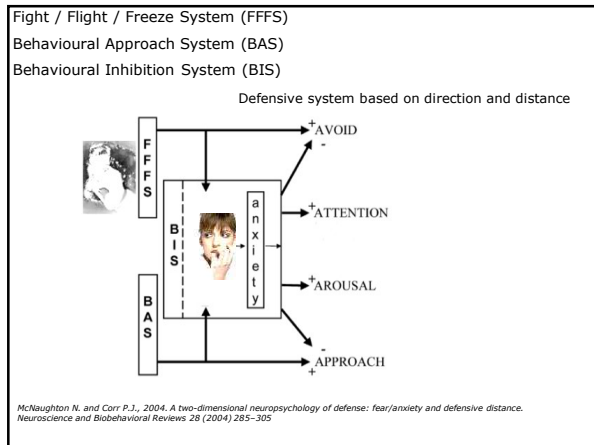
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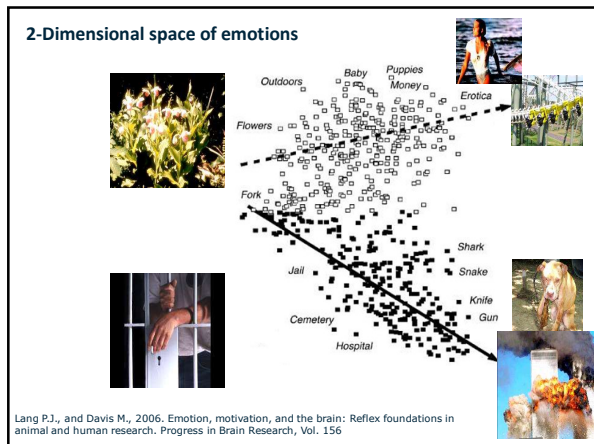
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