



BARCELONA  
ISAZ 2016

Proceedings

# Exploring Human – Animal Interactions

*a multidisciplinary approach from  
behavioral and social sciences*

Barcelona 7th – 10th of July 2016

## Vision, Goals and Objectives

Animals were domesticated thousands of years ago and are now present in almost every human society around the world. Nevertheless, only recently scientists have begun to analyse both positive and negative aspects of human-animal relationships.

For centuries people have recognised the value of animals for obvious economical reasons, but also as an important source of physical and emotional wellbeing. Indeed, people's attitudes towards animals depend on a variety of factors, including socio-economical relationships with each particular species, cultural background, religious beliefs, as well as individual differences regarding behaviour and personality. A proper understanding of these differences requires a multidisciplinary approach, from psychology, social psychology and anthropology to psychiatry and neuroscience.

The main goal of the conference would be to provide delegates with an updated and multi-disciplinary overview of human-animal interactions. Selected topics would include but are not limited to:

- The concept of empathy in the study of human-animals interactions.
- The concept of protected values (or sacred values) in human-animal interactions.
- Understanding cultural views on animals.

We will also organise a Satellite Meeting (10th of July) on the state of the art of the abandonment of companion animals and global strategies to prevent the abandonment.

### ISAZ GRATEFULLY ACKNOWLEDGES THE GENEROUS SUPPORT OF THE 2016 CONFERENCE FROM THE FOLLOWING SPONSORS AND COLLABORATORS

#### Sponsors



#### Collaborators



## Thursday 7th July

19:00 – 20:30

**Welcome Ceremony**

Barcelona City Council

## Friday 8th July

8:00 – 18:30

**Registration at the PRBB**

9:00 – 9:15

**Opening address**

9:15 – 10:15

**Keynote Speaker**

**Dr. Roman Witting** (Max Planck Institute)

**“Bonds, cooperation and prosociality in wild chimpanzees.”**

10:15 – 10:55

**Oral Presentations – Session 1**

**Session 1A – PRBB Auditorium**

**Pet-owner relationships I**

10:15-10:35

A0013\_Animal hoarding: when the love of animals goes wrong

M. Paterson

10:35-11:55

A0014\_The search of pet owners in Fukushima for “bonding rights”

H. Kajiwara

**Session 1B – Room Marie Curie**

**Animal-assisted interactions I**

10:15 – 10:35

A0121\_Gender gaps in AAT? Women in prison benefit less from dog-assisted group therapy than men.

B.U. Stetina

10:35 – 10:55

A0101\_The lives of animals participating in animal-assisted interventions: the need for ethical conduct for the welfare of school animals.

B. Jegatheesan

10:55 – 11:20

**Coffee Break / Poster session**  
(Room Charles Darwin)

11:20 – 13:20

**Oral Presentations - Session 2**

**Session 2A – PRBB Auditorium**  
**Pet-owner relationships II**

11:20-11:40

A0041\_ Which is more important to the bond between owner and pet, oxytocin or  $\beta$ -endorphin?  
J. Bradshaw

11:40-12:00

A0073\_ Ownership styles: parallels with human parenting and their influence on pet dogs' behaviour in a stressful social situation.  
G. Cimarelli (\*Student award competition)

12:00-12:20

A0081\_ Emotional state-matching in dogs (Canis familiaris) to sounds of humans and conspecifics.  
A. Huber (\*Student award competition)

12:20-12:40

A0112\_ Adult domestic dogs (Canis familiaris) are more strongly bonded to owners than to their own mothers.  
C. Mariti

12:40-13:00

A0105\_ A Spanish population-based survey of factors affecting quality of cat-owner bond using a preliminary version of the Cat-Owner Relationship Scale (CORS).  
J. Bowen

13:00-13:20

A0117\_ Cats as potential causes of conflict and controversy – report from a representative questionnaire study of Danes and their relations to cats.  
P. Sandoe

**Session 2B – Room Marie Curie**  
**Animal-assisted interactions II**

11:20 – 11:40

A0031\_ Effects of service dogs on mental health and wellness in spouses of military veterans.  
K Rodríguez (\*Student award competition)

11:40 – 12:00

A0052\_ Hounds and homesickness: the effects of an animal-assisted therapeutic intervention for first-year university students.  
J.T. Binet

12:00 – 12:20

A0067\_ Animal-assisted intervention for autism: a systematic literature review (2012-2015).  
M. O'Haire

12:20 – 12:40

A0068\_ Dog assisted activities in elementary school in Greece. Effects on the students' self-esteem, school progress, adaptation and depressive symptomatology.  
E. Diamantakos (\*Student award competition)

12:40 – 13:00

A0076\_ Animal-assisted activity as a non-pharmacological intervention to treat depression and agitation, and improve quality of life in patients with dementia.  
C. Olsen (\*Student award competition)

13:00-13:20

A0095\_ A research strategy for documenting and measuring the effects of animal- and nature-based therapies in complex environments such as Green Chimneys.  
M. Mueller

13:20 – 14:30

**Lunch at the PRBB/ Poster session**  
(Room Charles Darwin)

14:30 – 15:30

**Keynote Speaker**

**Dr. Oscar Vilarroya** (Autonomous University of Barcelona)

**“The study of protected values in human-animal interactions.”**

15:30 – 16:30

## Oral Presentations – Session 3

### Session 3A – PRBB Auditorium Attitudes towards companion animals I

15:30 – 15:50

A0016\_The effects of video footage versus photographs on perception of dog temperament.

L. Clarke

15:50 – 16:10

A0017\_An appetite for dogs: consuming and loving them in Vietnam.

A. Podberscek

16:10 – 16:30

A0036\_A moveable beast: subjective influence of human-animal relationships on risk perception and behavior during bushfire threat.

J. Trigg

### Session 3B – Room Marie Curie Attitudes towards non-companion animals I

15:30 – 15:50

A0049\_Which animals do we save and why? Factors that influence people's willingness to pay for the conservation of endangered species.

L. Apostle

15:50 – 16:10

A0059\_Exhibit Labels in Zoos: comparison between the classic and the interactive.

N. Iglesias (\*Student award competition)

16:10 – 16:30

A0069\_“It's hard to eat a friend”. How goat owners confront the friend/food dilemma.

L. Zasloff

16:30 – 17:00

**Coffee Break / Poster session**  
(Room Charles Darwin)

17:00 – 18:00

## Oral Presentations - Session 4

### Session 4A – PRBB Auditorium Attitudes towards companion animals II

17:00 – 17:20

A0055\_“Sit and stay, Chloe”: popular human names as dog mames in contemporary New York.

M.P. Pregowski

17:20 – 17:40

A0083\_Winning personalities: concern for purebred health risks does not impact breed choice.

B. Daly

17:40 – 18:00

A0124\_Purebreds are like unicorns: understanding the breed ancestry of shelter dogs & the influence of breed labels on potential adopter perception.

L. Gunter (\*Student award competition)

### Session 4B – Room Marie Curie Attitudes towards non-companion animals II

17:00 – 17:20

A0109\_Public perception of urban feral cats and their management in Barcelona.

P. Calvo

17:20 – 17:40

A0103\_Primates, pathogens, and biophilia: how tourists present risks of infectious diseases to monkey and ape conservation.

M. Muehlenbein

17:40 – 18:00

A0088\_Examining lesser known risk factors in animal harm.

J. Becker

20:30 – 23:30

**Conference Dinner**

# Saturday 9th July

8:00 – 13:30

**Registration at the PRBB**

8:30 – 9:30

**Keynote Speaker**

Dr. Harold Herzog (Western California University)

**“Communicating what we know (and don’t know) about human-animal relationships.”**

9:30 – 10:30

**Oral Presentations - Session 5**

**Session 5A**

PRBB Auditorium

**Children and non-human animals I**

9:30 – 9:50

A0008\_Animal sentience: the influence of beliefs about animal mind on positive and negative child-animal interactions.

R. Hawkins (\*Student award competition)

9:50 – 10:10

A0026\_Cognitive and affective factors in children’s perception of animals.

S. Albone

10:10 – 10:30

A0110\_How we can teach children and parents dogs’ body language.

K. Meints

**Session 5B**

Room Marie Curie

**Animal-assisted interactions III**

9:30 – 9:50

A0020\_The horse sense project –The value of using an equine setting to meet therapeutic goals.

A. Darby

9:50 – 10:10

A0048\_Service dogs and veterans: a phenomenological study exploring the lived experience.

C.A. Krause-Parello

10:10 – 10:30

A0037\_Subclinical autism traits and psychological well-being in adults: so relationships with companion animals moderate or mediate the relationship?.

G. Petrou

10:30 – 11:00

**Coffee Break / Poster session**

(Room Charles Darwin)

11:00 – 12:20

**Oral Presentations - Session 6**

**Session 6A**

PRBB Auditorium

**Children and non-human animals II**

11:00 – 11:20

A0032\_Social behaviors and positive emotional displays increase in typically developing children in the presence of animals compared to toys.

N. Guérin (\*Student award competition)

11:20 – 11:40

A0050\_A school-based intervention to enhance children’s understanding of animals’ welfare needs.

J. Williams

11:40 – 12:00

A0106\_Factors involved in prosocial behaviour towards dogs: an exploratory study in 15 year old children.

J. Fatjó

12:00 – 12:20

A0126\_Reapproaching the pet-effect.

J. Eshuis

## Session 6B

Room Marie Curie

### Human-horse interactions

11:00 – 11:20

A0021\_The relationship between human-animal empathy and perception of pain among working horses owners.

D. Luna (\*Student award competition)

11:20 – 11:40

A0028\_Human-horse relationships and veterinary care decision-making.

M. Mueller

11:40 – 12:00

A0114\_Horses in islamic tradition and muslim cultures. From islamic source texts to muslim attitudes towards horse today.

B. Ghiringhelli

12:00 – 12:20

A0018\_Effects of horsemanship training on psychophysiological health and perceptions of quality of life among military veterans with post traumatic stress disorder.

J.A. Jiménez

12:20 – 14:00

### Lunch at the PRBB/ Poster session

13:00 – 14:00

### Waltham session - NIH Sponsored Research

14:00 – 15:20

### Oral Presentations - Session 7

## Session 7A

PRBB Auditorium

### Health effects of HAI

14:00 – 14:20

A0040\_Matching needs and sharing happiness: understanding why owners walk their dogs.

C. Westgarth

14:20 – 14:40

A0023\_Association between dog ownership, physical activity, and health-related quality of life in veterinary students.

V. Corrigan

14:40 – 15:00

A0024\_Does the presence of a dog reduce weight bias?

M. Crossman

15:00 – 15:20

A0084\_Companion animals, social engagement, and psychological well-being in older adults in the United States.

J.Bibbo

## Session 7B

Room Marie Curie

### Working dogs / Pet effect

14:00 – 14:20

A0034\_The importance of dog-handler interactions and handler characteristics in influencing scent detection dog success.

S. Beebe

14:20 – 14:40

A0043\_Factors affecting guide dog partnership success.

C. Whelan (\*Student award competition)

14:40 – 15:00

A0047\_Training pet dogs for scent work as diabetes alert dogs.

T.J Howell

15:00 – 15:20

A0075\_The pet-effect in real life: the influence of companion animals on affect and self-esteem in daily life.

M.Janssens

15:20 – 16:00

### Coffee Break / Poster session

16:00 – 17:00

### ISAZ Annual General Meeting

Conference wrap up and awards

# Sunday 10th July

Josep Marull Lecture Hall, Campus Mar  
(Autonomous University of Barcelona)

9:00 – 9:30

## **Opening address**

Peter SandØe (University of Copenhagen - Denmark) and Jaume Fatjó (Autonomous University of Barcelona - Spain)

## **Companion animal abandonment: size and ethical dimensions of the problem**

9:30 – 10:15

## **Keynote Speaker**

Kate Natrass Atema (International Companion Animal Management Coalition)

## **Are We Making a Difference?: ICAM guidance for monitoring and evaluating dog population management interventions**

10:15 – 11:00

## **Keynote Speaker**

Jolanda Pluijmakers (Davalon - The Netherlands)

## **Long term housing of dogs and cats in shelters: welfare issues**

11:00 – 11:30

## **Open discussion**

## **Controversies in animal welfare in shelters: euthanasia**

Moderator: Peter SandØe

Elly Hiby, Jolanda Pluijmakers

11:30 – 12:00

## **Coffee break**

12:00 – 12:45

## **Keynote Speaker**

Pauleen Bennett (La Trobe University – Australia)

## **Animal abandonment and adoption: insights from studies on the human-animal bond**

12:45 – 13:30

## **Keynote speaker**

Antoni Bulbena (Autonomous University of Barcelona - Spain)

## **Compassion fatigue and burnout in animal shelters**

13:30 – 14:15

## **Open discussion**

## **Controversies on psychological aspects of animal abandonment, adoption and shelter management**

Moderator: James Serpell (University of Pennsylvania - USA)

Pauleen Bennett, Antoni Bulbena

14:15

## **Closing summary**

Peter SandØe and Jaume Fatjó.



# The study of protected values in human-animal interactions

**OSCAR VILARROYA**

*Universitat Autònoma de Barcelona and Fundació IMIM*

Protected values are a key component of social and cultural sociability. They are beliefs that define our reference groups, and represent the cornerstones of belief systems that incorporate core values (e.g., religious commitment, family ties, group honor, justice, and animal welfare, among others).

Protected values are not just specific ideas that individuals hold dear; they are ideals that people are willing to fight, and they are the driving force behind ingroup-vs.-outgroup actions, regardless of risks or expected outcomes; they elicit feelings of outrage when trespassed, and cannot be bought off with utilitarian incentives.

Protected values sanctioned or condemned under the prism of deontology: they are presumed to be universal truths and, hence, they are believed to exist independently of human thought. In sum, protected values shape how individuals' engage in many areas of their social life, including the area of human-animal interaction. Indeed, the relationship between humans and non-human animals is a rapidly growing focus of multidisciplinary research and clinical application.

Most of this growing interest is focused on pet animals and other selected species who have been appreciated by societies for thousands of years. In this area, protected values have a particular critical role in the growing understanding of the mutual benefits of the human-animal relationship for health and well-being. This trend is driving the interest of exploring, from a scientific point of view, of the different vectors that comprehend the human animal interaction.

In my talk, I will review the growing body of work that explores the role of human-based "protected values" in the research of human-animal interactions. Following a brief conceptual overview of protected values, I will then provide a review of the research linking value-orientations and human-animal interactions.

## Oscar Vilarroya

*Professor of Psychiatry,  
Universitat Autònoma de Barcelona, Spain*



Oscar Vilarroya, M.D Ph.D., is Associate Professor of Psychiatry at the Universitat Autònoma de Barcelona (UAB), where he is the director of the Cognitive Neuroscience Unit (URNC) as well as director of the “Social Brain” Chair.

He is also the coordinator of the Neuroimaging Research Group (NRG) at the Fundació IMIM.

Dr. Vilarroya has made contributions in theoretical neurobiology and neuroimaging, and he has also been active in scientific popularization.

He has published scientific essays (e.g. *The Dissolution of Mind* (Rodopi, 2002), articles in indexed journals, and has obtained funds from different national and international institutions.

Under his direction, the UAB “Social Brain” Chair has helped in approaching social neuroscience to the general public, through high-level scientific meetings and activities (*Social Brain Matters* (Rodopi 2007); *Annals of the New York Academy of Sciences*, volumes 1167 and 1299).

# Bonds, cooperation and prosociality in wild chimpanzees

**ROMAN M WITTIG**<sup>1,2</sup>, Catherine Crockford<sup>1</sup>

1. Max Planck Institute for Evolutionary Anthropology, Department of Primatology, Deutscher Platz 6, Leipzig, Germany

2. Tai Chimpanzee Project, Centre Suisse de Recherches Scientifiques, Abidjan, Côte d'Ivoire

Many social animals know the members of their social units individually and develop differentiated relationships with them. Chimpanzees, like some other social mammals, can form close and enduring social relationships which are called social bonds and are defined as dyads in which both individuals initiate high rates of affiliative and cooperative behaviours, specifically grooming, coalitionary support and food sharing, over months or years. Maintaining social bonds leads to greater reproductive success, health and longevity. Underlying mechanisms promoting potential fitness benefits, however, are still ambiguous, especially for non-kin, non-sexual bonds. One possibility is that bond partners buffer the negative effects of physical and psychological stress, where prolonged cortisol release is associated with reduced fertility, health and longevity. Another may be that direct benefits are derived from cooperative exchange, which may be emotionally rather than cognitively mediated through oxytocin, a key neuropeptide in social bonding. It appears also that animal species with high levels of cooperation show prosocial behaviours. One reason might be that these animals use similar mechanisms when facilitating cooperation and prosocial behaviour.

Here we investigate the relationship between bonds and cooperation, and how this translates into prosocial behaviour. First we look into how chimpanzees form and maintain social bonds with kin and non-kin, measuring urinary oxytocin levels after grooming. We examine their urinary glucocorticoid and oxytocin levels following several cooperative events, including those considered to be stressors (potentially dangerous encounters with rival groups or intense food competition contexts), or relaxers (grooming interactions), and contrasted them with socially neutral (resting, uncontested feeding) situations. Finally we explore how chimpanzee cooperation translates into prosocial behaviour like sharing food and informing others of danger.

Our results suggest that generally the combination of engaging in cooperative behaviours with bond partners compared with non-bond partners, rather than either factor alone, is associated with hormonal profiles likely to facilitate cooperation, prosociality and stress reduction.

## Roman Wittig

*Research Group Leader, Department of  
Primateology, Max Planck Institute, Germany*



Roman Wittig received his PhD in 2004 from the University of Leipzig, Germany.

After research positions in the Biology Department at the University of Pennsylvania in Philadelphia, USA, and in the School of Psychology at the University of St Andrews, Scotland, he returned to Leipzig in 2011 to take the position as director of the Taï Chimpanzee Project.

Since 2013 he is head of the research group on chimpanzees within the Department of Primatology in the Max Planck Institute for Evolutionary Anthropology.

His research investigates the evolutionary roots of social cognition and social bonds and examines the hormonal and functional underpinnings of social interactions.

He combines behavioural observations of wild primates, with field experiments and non-invasive hormone sampling, to uncover the social complexity of chimpanzees and bonobos in the wild

# Communicating what we know (and don't know) about human-animal relationships

**HAROLD HERZOG**

*Western Carolina University*

Over the past 30 years, there has been an explosion of interest among both scholars and the public in the dynamics of our relationships with members of other species. For example, a literature search revealed that the annual number of scholarly papers published on the topic of animal assisted therapy (AAT) jumped from four in 1985 to nearly 1,000 in 2015. In this presentation, I will discuss some major themes which have emerged over the last three decades of anthrozoological research. These include the impact of pets on human health, the effectiveness of the use of animals in therapeutic settings, and the connection between animal cruelty and human-directed violence ("The Link").

Some findings in these areas have proven robust. There is, however, often a mismatch between the actual empirical evidence and public perceptions of what we know about, for instance, the effectiveness of AAT and the strength of "The Link." The disconnect between perception and reality in what we know about human-animal relationships lie with both researchers and the media. On the research side, these include factors such as biased literature reviews, the file drawer effect, selective reporting of results, and "spin" (slanted interpretations of research findings). Misleading media coverage of human-animal relationship research stems from factors such as the reliance of journalists on press releases, marked media preferences for "feel-good" animal stories, and the promotion of research findings by special interest groups.

Widespread misunderstanding of what we know and don't know about human-animal relationships can have real-world consequences. I will emphasize the need to report our research results accurately to both to scientific colleagues and the press. Finally, I point out examples in which researchers have effectively and accurately communicated the excitement of our field and the latest findings to the public

## Harold Herzog

*Professor of Psychology,  
Western Carolina University, USA*



Hal Herzog has been investigating the complex psychology of our interactions with other species for more than two decades. He is particularly interested in how people negotiate real-world ethical dilemmas, and he has studied animal activists, cockfighters, animal researchers, and circus animal trainers.

An award-winning teacher and researcher, he has written more than 100 articles and book chapters. His research has been published in journals such as *Science*, *The American Psychologist*, *Current Directions in Psychological Science*, *The Journal of the Royal Society*, *The American Scholar*, *New Scientist*, *Anthrozoös*, *BioScience*, *The Journal of the American Veterinary Medical Association*, and *Animal Behavior*. His work has been covered by *Newsweek*, *Slate*, *Salon*, *National Public Radio*, *Scientific American*, *USA Today*, *The Washington Post*, *The Boston Globe*, *The Chicago Tribune* and many other newspapers. In 2013, he received the Distinguished Scholar Award from the International Society for Anthrozoology.

## Oral Presentations

### Session 1A

A0013	17
A0014	18

### Session 1B

A0121	20
A0101	21

### Session 2A

A0041	23
A0073	24
A0081	25
A0112	26
A0105	27
A0117	28

### Session 2B

A0031	30
A0052	31
A0067	32
A0068	33
A0076	34
A0095	35

### Session 3A

A0016	37
A0017	38
A0036	39

### Session 3B

A0049	41
A0059	42
A0069	43

### Session 4A

A0055	45
A0083	46
A0124	47

### Session 4B

A0109	49
A0103	50
A0088	51

### Session 5A

A0008	53
A0026	54
A0110	55

### Session 5B

A0020	57
A0048	58
A0037	59

### Session 6A

A0032	61
A0050	62
A0106	63
A0126	63

### Session 6B

A0021	66
A0028	67
A0114	68
A0018	69

### Session 7A

A0040	71
A0023	72
A0024	73
A0084	74

### Session 7B

A0034	76
A0043	77
A0047	78
A0075	79

## Poster Presentations

P0004	81	P0085	124
P0005	82	P0086	125
P0006	83	P0087	126
P0007	84	P0089	127
P0009	85	P0090	128
P0010	86	P0091	129
P0011	87	P0092	130
P0012	88	P0093	131
P0015	89	P0094	132
P0019	90	P0096	134
P0022	91	P0097	135
P0025	92	P0098	136
P0027	93	P0099	137
P0029	94	P0100	138
P0030	95	P0102	139
P0033	96	P0104	140
P0035	97	P0107	141
P0038	98	P0108	142
P0042	99	P0113	143
P0044	100	P0115	144
P0045	101	P0116	145
P0046	102	P0118	146
P0051	103	P0119	147
P0053	104	P0120	148
P0054	105	P0122	149
P0056	106	P0123	151
P0057	107	P0125	152
P0058	108		
P0060	109		
P0061	110		
P0062	111		
P0063	112		
P0064	113		
P0065	114		
P0066	115		
P0070	116		
P0072	117		
P0074	118		
P0077	119		
P0078	120		
P0079	121		
P0080	122		
P0082	123		

# Session 1A



# Animal Hoarding: when the love of animals goes wrong

**MANDY PATERSON**

[mpaterson@rspcaqld.org.au](mailto:mpaterson@rspcaqld.org.au)

*Royal Society for the Prevention of Cruelty to Animals, Queensland, Queensland, Australia*

The so called “mad cat lady” exists in society. Such people are often depicted in film and television as mildly eccentric and quirky, but essentially harmless. Unfortunately this basically benign depiction can hide the truth that some people collect animals, end up with more than they can manage to care for adequately and fail to notice the suffering that is happening right under their noses. This is animal hoarding and it is now recognised as a serious mental health issue in the Diagnostic and Statistical Manual of Mental Health Disorders (DSM 5). The condition has major welfare consequences on the animals involved with many animals suffering deprivation, malnutrition, untreated diseases and inappropriate socialisation. The condition also has deleterious effects on the hoarder her/himself, their family and friends and the wider community.

Data on the number of hoarding cases in Australia and in other countries is limited. Estimates suggest it is on the increase as people become more isolated from family and friends and turn to animals for companionship.

This paper discusses animal hoarding through a review of the literature and by providing firsthand experiences from an organisation (the RSPCA) which has animal welfare regulation duties. It explores what hoarding is, how it effects people, how it impacts on the animals involved, how to recognise when animal hoarding is occurring, and the challenges involved in managing cases.

# The Search of Pet Owners in Fukushima for “Bonding rights”

**HAZUKI KAJIWARA**

[hk@honeyplan.com](mailto:hk@honeyplan.com)

*Rikkyo University, Tokyo, Japan*

The study of disasters and animals has developed as a field for research in recent years. However, few studies have dealt with human-companion animal interaction after a nuclear disaster. This paper focuses on the problems faced by guardians seeking to maintain their relationship with their pets after Fukushima’s nuclear disaster in March 2011. The fact that several hundred dogs and cats are still left behind even now five years later in 2016 in contaminated areas is overlooked even in Japanese society. This presentation explores the impact of the nuclear plant melt-down on owners and their pets.

The presentation reports on data collected from ten field trips to Fukushima between 2012 and 2015 that included interviews with 32 pet owners aged 30-85 (10 males and 22 females) and 3 animal rescue activists. Trap-Neuter-Return activities, feeding, walking and the sheltering of dogs were observed in the government-restricted areas. That data is further supplemented by a questionnaire survey to 200 evacuating pet owners.

Several findings emerged. First, most pet owners strove to maintain a relationship with their pets even those they risked being exposed to radiation. Second, most owners found it difficult to plan for the future owing to the lack of specific policy being provided by the authorities about rebuilding areas, seen cynically by many residence as an on-going campaign of misinformation and concealment. Third, information on the variation in levels of nuclear contamination, as released by the government, nevertheless influenced guardian-companion animal relationship in a complicated manner. Fourth, collectively these findings point to the fact that pet owners in Fukushima refuge areas are searching for a way to establish the right of pet owners to maintain their bonds with their pets. Since many nuclear power plants presently operate around the world, the ethnographic accounts of pet owners as nuclear refugees provide important knowledge for planning evacuations and social support for evacuees in the future.



# Gender Gaps in AAT? Women in prison benefit less from dog-assisted group therapy than men

**BIRGIT U. STETINA**<sup>1</sup>, Alexandra Wischall-Wagner<sup>2</sup>, Julia Netousek<sup>2</sup>, Ursula Handlos<sup>3</sup>

[birgit.u.stetina@sfu.ac.at](mailto:birgit.u.stetina@sfu.ac.at)

1. Sigmund Freud University, Vienna, Austria
2. Penitentiary Vienna-Favoriten, Vienna, Austria
3. Special Education Center for Integrative Support, City School Board, Vienna, Austria

## INTRODUCTION

With the increase of female prisoners worldwide “the treatment of women prisoners has acquired importance and urgency” since 2009 (UNODC, 2009). And although new programs have been started, the lack of scientific results is startling. The goal of the current study was to identify gender differences regarding the effects of dog-assisted group therapy.

## METHODOLOGY & STATISTICAL ANALYSIS

Using a pre-post design, 63 incarcerated drug addicted criminal offenders (36 male, 27 female) participated in a dog-assisted group therapy targeting socio-emotional competencies. Self-report questionnaires to measure self-concept (SDQ-III (Marsh, 2003)), emotional status (EMI-B (Ullrich & Mynck, 2001)) and emotional competencies (SEE (Behr & Becker, 2004)) were employed. Statistical analysis included GLM procedures and Eta<sup>2</sup> as concurrent effect size measure.

## RESULTS

Women tend to benefit significantly less from the AAT program in most measured areas; especially regarding emotion regulation ( $F(1, 61)=6.868, p=0.11, \text{Eta}^2=0.101$ ) and emotional status (anxiety ( $F(1, 61)=10.265, p=0.002, \text{Eta}^2=0.144$ ), depression ( $F(1, 61)=15.014, p<0.001, \text{Eta}^2=0.198$ ) and aggression ( $F(1, 61)=17.030, p<0.001, \text{Eta}^2=0.218$ )). The analysis only showed significantly better effects for females in their self-concept regarding relations (same sex ( $F(1, 60)=7.742, p=0.007, \text{Eta}^2=0.114$ ), opposite sex ( $F(1, 61)=15.493, p<0.001, \text{Eta}^2=0.205$ ) and trustworthiness ( $F(1,61)=10.844, p=0.002, \text{Eta}^2=0.153$ )).

## CONCLUSIONS

Although recent research has shown that a dog might not be a relevant contributing factor regarding the development of skills in prison for women (Jasperson, 2013) studies in diverse Austrian male prisoner populations have shown different results. AAT has been found to be promising for female prisoners as well in the current study. But women seem to profit less from the used program than men. Especially designed programs for woman are needed to match their needs.

This work was submitted and accepted for ISAZ 2015, but not presented because of personal reasons and has not been published since then.

# The Lives of Animals Participating in Animal-Assisted Interventions: The Need for Ethical Conduct for the Welfare of School Animals

**BRINDA JEGATHEESAN**<sup>1,3</sup>, Elizabeth Ormerod<sup>2,3</sup>

[brinda@uw.edu](mailto:brinda@uw.edu)

1. *University of Washington, Seattle, Washington, USA*
2. *Society for Companion Animal Studies, UK*
3. *International Association of Human-Animal Interaction Organizations, USA*

Animal-assisted interventions (AAI) are becoming increasingly popular in schools. There is growing evidence that animals support children's learning and development. Teachers often house animals such as rabbits and guinea pigs in classrooms and include them in their curricula and instructions to promote social and behavioral changes in children, instill nurturing skills, and promote self-esteem (Jegatheesan, 2009). Butterflies, spiders, and rats are often used for science education (Hodges, 1991). Despite the growing number of animals in schools, the welfare of these animals has received limited empirical attention. Guidelines or policies for animal welfare in schools are non-existent in many countries.

Drawing on two ethnographic AAI cases from primary schools in the US and Asia and an applied practice AAI case in a high school in the UK, the study addresses the urgent need for animal welfare guidelines and standards in schools. Data collection methods included ethnographic participant-observations and semi-structured interviews with 45 children and 14 teachers within 2 primary schools in the US and Asia and observations of an AAI program and interviews with the senior school teacher in a high school in the UK. In all three cases, observations of the animals' behavior and children's reactions were recorded. In the US, psychological effects on children were evident at the destruction of the animals they had raised in a science project once the educational goal was attained. In Asia, several children subjected animals to significant stress by teasing and neglecting them because their appearances were perceived as undesirable. Cultural preferences for cuteness and perfection influenced children's negative behavior towards these animals. In the UK, high schoolers were found participating in an abhorrent practice of feeding live mice to a snake. The children were involved in the care of the mice, which were allowed to breed uncontrollably. The children witnessed the offspring being fed live to the snake. The authors emphasize scientifically based animal welfare guidelines implemented in schools so that AAI practices are safe and humane (Ormerod, 2001). Teachers and school administrators are recommended to receive lessons in animal behavior, nutrition, selection, housing, handling and care of species before implementing AAI.

# Session 2A

# Which is more important to the bond between owner and pet, oxytocin or $\beta$ -endorphin?

**JOHN BRADSHAW**

[j.w.s.bradshaw@bristol.ac.uk](mailto:j.w.s.bradshaw@bristol.ac.uk)

*University of Bristol, Bristol, UK*

Ever since the publication of the pioneering paper on simultaneous hormonal changes in dogs and humans (Odendaal & Meintjes, 2003) there has been a focus in the literature, both scientific and popular, on the role of oxytocin in forging affiliative bonds between these two species. Whereas the elevations in plasma oxytocin in dogs after they have been stroked by their owners have proved robust, the parallel changes in the humans performing the stroking have generally been found to be small and in some individuals, negative. Moreover, the literature on the psychological effects of oxytocin in humans has begun not only to question the validity of measurements taken from plasma, but also to add complexity to its popular reputation as the “love hormone”.

Other endocrine changes have been recorded in people after stroking their dogs, including a substantial increase in plasma  $\beta$ -endorphin. It has been proposed that this opioid hormone, which is released during exchanges of mutual grooming, has to a large extent replaced oxytocin in sustaining affiliative relationships among Old World primates (Machin & Dunbar, 2005) including humans. It is therefore possible that the rewarding and stress-relieving properties of physical contact with companion animals experienced by their owners are sustained more by opioids than by oxytocin.

Machin, AJ & Dunbar, RIM. 2011. The brain opioid theory of social attachment: a review of the evidence. *Behaviour* 148, 985-1025.

Odendaal, JSJ & Meintjes RA. 2003. Neurophysiological correlates of affiliative behaviour between humans and dogs. *The Veterinary Journal* 165, 296-301.

# Ownership styles: parallels with human parenting and their influence on pet dogs' behaviour in a stressful social situation

**CIMARELLI G**<sup>1,2,3</sup>, Turcsán B.<sup>1</sup>, Bánlaki Z.<sup>4</sup>, Range F.<sup>1,2</sup>, Virányi Z.<sup>1,2</sup>

[giulia.cimarelli@vetmeduni.ac.at](mailto:giulia.cimarelli@vetmeduni.ac.at)

1. *Clever Dog Lab, Messerli Research Institute, University of Veterinary Medicine, Vienna*
2. *Wolf Science Center, Ernstbrunn, Austria*
3. *Department of Cognitive Biology, University of Vienna*
4. *Department of Medical Chemistry, Molecular Biology and Pathobiochemistry, Semmelweis University, Budapest, Hungary*

Human parenting styles strongly influence children's social development: for example, mothers who are responsive in their daily interactions have more securely attached infants who better cope with stress (Leerkes 2011). Dog-owner relationships seem to be analogous to human infant attachment, and dogs are often given the social position of a child (Miklósi & Topál 2013). Research on how ownership styles (OS) may influence dog behaviour mainly focused on the effects of different training techniques, overlooking the impact of daily spontaneous interactions between dogs and owners. In this study we aimed at defining whether OS show similarities to human parenting, and whether they influence dog behaviour.

We tested 220 dog-owner dyads in a set of 8 experimental tasks (e.g. during physical restriction, greeting and playing) measuring 20 variables on the owners' behaviour towards their dogs. Running a factor analysis, 3 different OS factors were extracted: Warmth, Social support and Control. In a second experiment, the dogs were approached by a threatening person while their owners stood behind them passively. Searching contact with the owner and reaction to threat were coded. We found that those dogs who remained passive or hid behind the owners had warmer owners in contrast to those who approached the experimenter in an aggressive or appeasing manner.

Our results show that dog OS have analogous components to human parenting, suggesting a similar activation of our caregiving system by human infants and dogs. Also, the results show that dogs having owners with a warm and positively communicative interaction style rely on their owners more when facing social stress. These findings call attention to the importance of how owners' daily spontaneous interactions shape their dogs' behaviour, suggesting a novel and wider approach to the study of the dog-human relationships.

Leerkes, E. M. 2011. Maternal sensitivity during distressing tasks: a unique predictor of attachment security. *Infant Behav Dev*

Miklósi, A., & Topál, J. 2013. What does it take to become "best friends"? Evolutionary changes in canine social competence. *Trends Cogn Sci*



# Emotional state-matching in dogs (*Canis familiaris*) to sounds of humans and conspecifics

**A. HUBER**<sup>1,2</sup>, C.A. Müller<sup>1</sup>, A.L.A. Barber<sup>1</sup>, T. Faragó<sup>3</sup>, L. Huber<sup>1</sup>

[Annika.Huber@vetmeduni.ac.at](mailto:Annika.Huber@vetmeduni.ac.at)

1. Clever Dog Lab, Comparative Cognition, Messerli Research Institute, University of Veterinary Medicine Vienna
2. Ethics and Human-Animal Studies, Messerli Research Institute, University of Veterinary Medicine Vienna
3. MTA-ELTE Comparative Ethology Research Group, Budapest, Hungary

Dogs are of exceptional significance for investigating the concept of empathy including cross-species empathy with humans. Playback studies have already demonstrated emotional contagion, a basic component of empathy, in dogs to negative emotional sounds of humans (Yong & Ruffman, 2014). What is lacking so far is to contrast emotional sounds of humans with those of conspecifics and negatively valenced sounds with positively ones. The aim of this playback study was to address these questions and, consequently, to provide important insights into inter- and intraspecific empathy as well as empathy for positive and negative emotions.

Firstly, we contrasted emotional sounds of both species with non-emotional sounds from the dogs' environment to analyze differences in the dogs' behavioral response. Secondly, we analyzed whether the behavioral response differed depending on the species and the valence of the emotional stimulus. For a response interpreted as emotional contagion, the emotional tone of the dogs' behavior has to correspond to the valence of the emotional sound. Consequently, in response to emotionally negative sounds, dogs should increasingly express behaviors indicating negative emotions; this should not be the case for emotionally positive sounds. Behavioral indicators for negative emotional states were freezing and a Relative Reactivity Score comprising of several negative arousal behaviors.

The subjects showed increased attention to emotional compared to non-emotional sounds. Although the response towards emotional sounds of both species was similar, dog sounds, independent of their valence, generally induced more freezing behavior. Independent of species, both behavioral indicators for negative emotional states were significantly increased after negatively valenced sounds compared to positively ones.

The findings indicate emotional state-matching in dogs for negative sounds of both species, which suggests emotional contagion. Besides, the study provides a first approach for investigating empathy for positive emotional states in dogs. Research on empathy in animals is relevant not only for the empirical sciences but furthermore within an interdisciplinary framework as it implicates fundamental philosophical questions such as concerning morality beyond *Homo sapiens*.

Yong, MH & Ruffman, T. 2014. Emotional contagion: dogs and humans show a similar physiological response to human infant crying. *Behavioural Processes*, 108: 155-165

# Adult domestic dogs (*Canis familiaris*) are more strongly bonded to owners than to their own mothers

**CHIARA MARITI**, Emilia Votta, Irene Sani, Beatrice Carlone, Eva Ricci, Marcella Zilocchi, Claudio Sighieri, Angelo Gazzano

[chiara.mariti@unipi.it](mailto:chiara.mariti@unipi.it)

Dep. Veterinary Sciences, University of Pisa, Italy

The bond linking domestic dogs to owners is often considered similar to the child-mother attachment bond. However, humans have a particularly strong appeal to dogs, and it is possible that dog-man relationship outdoes the dog-mother bond.

The aim of this study was to investigate whether the bond linking adult dogs towards owners is similar to the bond towards their own mothers.

Fourteen adult dogs (6 males and 8 females,  $40.2 \pm 11.9$  months old, of differing breeds) participated at the study. Dogs had been living together with the same owner and with their own mother since birth. Each dog was tested twice, at one month distance, in a modified version of the Ainsworth's Strange Situation test where the presumed attachment figure was played once by the owner (interspecific) and once by dogs' mother (intraspecific). The test order was inverted for half of the sample. Dogs' behaviour was analysed continuously, and the duration of social and non social behaviours (physical contact, proximity, approach, visual orientation, social exploration, environmental exploration, locomotion, yelping, nearness to the door, behaviours against the door, stress signals such as nose licking, yawning and shaking) in the two tests was compared using the Wilcoxon test ( $p < 0.05$ ).

The statistical analysis revealed that contact maintenance behaviours were more displayed by dogs towards the owner than towards their mother in both episodes 4 and 7, after separation and reunion with the owner or mother; whilst such difference was less evident before being separated from the presumed attachment figure. The searching response and protest at separation was instead longer in the intraspecific test than in the interspecific one in all episodes, including when dogs were in the company of the stranger, of the owner/mother and when completely alone.

These findings suggest that the attachment system was more activated by the separation from the owner than from the mother. The higher protest at separation throughout the whole intraspecific test may be explained as the sum of separation from the owner (never present) combined in some episodes with separation from the mother. Therefore dogs seem to be more attached to owners than to their own mother.

# A Spanish population-based survey of factors affecting quality of cat-owner bond using a preliminary version of the Cat-Owner Relationship Scale (CORS)

**JONATHAN BOWEN**<sup>1,2</sup>, Pauleen Bennett<sup>3</sup>, Paula Calvo<sup>1,4</sup>, Antoni Bulbena<sup>1,4</sup>, Jaume Fatjó<sup>1,4</sup>  
[jbowen@rvc.ac.uk](mailto:jbowen@rvc.ac.uk)

1. Chair Affinity Foundation Animals and Health, Universitat Autònoma de Barcelona, Barcelona, Catalonia, Spain
2. Royal Veterinary College, North Mymms, Hertfordshire, UK
3. La Trobe University, Bendigo, Australia
4. IMIM (Hospital del Mar Medical Research Institute), Barcelona, Catalonia, Spain

## INTRODUCTION

Previously we found that factors such as the owner's sex and educational status were associated with the likelihood of a strong emotionally-based bond with a dog, as measured using MDORS. Here we looked for similar associations in a standardized population of cat owners using a previously developed instrument, which we have called the "CORS".

## METHODS

To develop CORS we adapted some existing MDORS items and added or substituted others (particularly in the cat-owner interaction sub-scale). Information will be presented on this development process. In the main study, a representative population of cat-owners was recruited using a commercial polling organization in Spain (n=347). Respondents completed the CORS and a set of questions about themselves and their lifestyle. Principal components analysis and hierarchical clustering were used to identify groups within the population. Binary logistic regression was used to identify factors that were associated with group membership.

## RESULTS

Two groups were found, which differed in scores for cat-owner interaction, emotional closeness and perceived-costs of ownership. 64.6% of the population experienced a "stronger" bond with their cats. As with dogs, features relating to companionship were influential in the relationship, but cat-owners also valued the cat's independent personality. Women and couples without children were more likely to have a strong bond. For each 1-point increase in owner-rating of the cat's sociability (1-10), owners were 48% more likely to be in the stronger bond group. For cats that were bought from a shop or received as a gift, it was less likely that the bond was strong.

## CONCLUSIONS

The CORS appears to be a useful tool for assessing the cat-owner bond, and applying it to a standardized population has enabled us to identify some interesting, and potentially generalizable, factors for predicting a successful cat-owner bond.

# Cats as potential causes of conflict and controversy – report from a representative questionnaire study of Danes and their relations to cats

**PETER SANDØE**<sup>1,2</sup>, Annika Patursson Nørspang<sup>1</sup>, Thomas Bøker Lund<sup>2</sup>,  
Charlotte Reinhard Bjørnvad<sup>3</sup>, Björn Forkman<sup>1</sup>

[pes@sund.ku.dk](mailto:pes@sund.ku.dk)

1. Department of Large Animal Sciences, University of Copenhagen, Copenhagen, Denmark
2. Department of Food and Resource Economics, University of Copenhagen, Copenhagen, Denmark
3. Department of Veterinary Clinical and Animal Sciences, University of Copenhagen, Copenhagen, Denmark

## BACKGROUND

Cats are potential causes of conflict and controversy. Cats allowed to roam freely may be viewed as a nuisance, and privately owned cats may stray, or be abandoned and so feed into populations of stray cats. This paper, drawing on research conducted in Denmark, aims to quantify the conflicting attitudes that may feed into such cat related conflicts and controversies.

## METHODS

Questionnaire data were collected in a representative sample of the Danish population (N= 2003).

## RESULTS

Among members of the Danish public, 65% give an affirmative answer to the question of whether they are people who like cats or not. 21% give a negative answer, and 14% will neither give a positive or a negative answer. The main reason for disliking cats concerns their “behaviour” – not more tangible hazards such as spread of diseases and predation. Among the Danish public, 21% have a cat in their household, and 13% previously have owned a cat, whereas the remaining 66% have never owned a cat. The potential for conflict is documented by the fact that 72% of cat owners allow their cat to roam outdoors while 27 % of the public find it a problem that cat owners let their cat outside to roam. Of these, about a quarter see free roaming cats as big problem and as a cause for strife between neighbours. Comparatively few of the cat owners see their cat as causing problems, e.g. only 12% of owners of outdoor cats think that it gives rise to problems when their cats defecate in a neighbour’s garden, whereas 17% of the total population are bothered by other people’s cats defecating in their gardens. The management of stray cats is also likely to give rise to controversy, in that a majority (51%) of the public feels pity for these cats, but a minority (16%) favour euthanizing of stray cats.

## CONCLUSION

People’s are divided in their views on cats. A majority are in favour of allowing cats in public spaces, but a significant minority strongly dislikes cats and prefers restrictions on their movement and euthanasia of stray cats.



# Effects of Service Dogs on Mental Health and Wellness in Spouses of Military Veterans with PTSD

**KERRI RODRIGUEZ, Marguerite O'Haire**

[rodri403@purdue.edu](mailto:rodri403@purdue.edu)

*Purdue University, West Lafayette, Indiana, USA*

Posttraumatic stress disorder (PTSD) can adversely influence military veteran family reintegration, marital satisfaction, and spouses' psychological and psychiatric well-being. One viable therapeutic option for spouses may be to place a service dog with the veteran, since the dog will live in the home and be accessible to the whole family, including spouses. There is growing evidence to suggest that the inclusion of animals in psychological treatment may effectively address trauma-related symptoms in non-military populations. Yet despite anecdotal accounts of positive outcomes for spouses, there is a lack of empirical research on their efficacy in this capacity. Our objective was to scientifically evaluate the effects of service dogs on both subjective (self-report) and objective (physiological) indicators of mental health and wellness among spouses of veterans with PTSD.

We recruited 137 military veterans diagnosed with PTSD who either currently had a service dog or were on the waitlist to receive one. A subset of 74 spouses of the veterans consented to participate (8 male, 66 female), including 44 with a service dog and 30 on the waitlist. We conducted standardized self-report measures including relationship satisfaction (Relationship Assessment Scale) as our primary outcome, as well as secondary outcomes on the NIH Patient Reported Outcomes Measurement Information System (PROMIS) including depression, anxiety, social functioning, and quality of life. Spouses also were asked to report on PTSD symptomology of themselves as well as the veteran using the PTSD Checklist. Finally, we collected salivary assays of cortisol awakening response to examine stress and hyperarousal.

Preliminary analyses indicate that spouses of veterans with a service dog reported significantly higher relationship satisfaction than spouses of veterans on the waitlist to receive a dog,  $t(71) = 2.04$ ,  $p < .05$ . Spouses of veterans with a service dog also rated the veterans' PTSD symptom severity score as lower than spouses of veterans on the waitlist ( $t(68) = -2.02$ ,  $p < .05$ ). Results will include complementing physiological salivary cortisol analyses as well as survey data on additional mental health and wellness outcomes.

This study provides initial evidence in support of the therapeutic efficacy of service dogs for veterans to confer measurable benefits in relationship satisfaction among spouses.

# Hounds and Homesickness: The Effects of an Animal-Assisted Therapeutic Intervention for First-Year University Students

**JOHN-TYLER BINFET**, Holli-Anne Passmore

[johntyler.binfet@ubc.ca](mailto:johntyler.binfet@ubc.ca)

*University of British Columbia, Kelowna, Canada*

Transitioning from high school to university can prove to be a formidable challenge for many first-year students, with many experiencing homesickness. Given that students who experience homesickness are more likely than their non-homesick cohorts to drop out of university (Burt, 1993), universities have a vested interest in supporting students during their first-year transition. Programs that provide opportunities for human-animal interactions on campus are gaining popularity as one way of increasing students' well-being.

The current study examined the effects of an eight-week animal-assisted therapy (AAT) program on first-year university students' well-being. An initial feasibility study (N = 86) was conducted that provided opportunities for students to interact, in small groups, with trained therapy dogs and their volunteer handlers.

Results indicated that this program reduced participants' levels of homesickness and increased their satisfaction with life. An experimental study was then conducted utilizing a similar eight-week group AAT program. Participants (N = 42) were assigned to either a treatment condition (i.e., the AAT program) or to a no-treatment condition akin to a wait-list control. At the end of the eight weeks, participants in the AAT program reported greater reductions in homesickness and greater increases in satisfaction with life than did those in the control condition. From beginning to end of the program, participants in the treatment group evidenced reductions in homesickness, and increases in satisfaction with life and connectedness to campus over the course of the program, while participants in the no-treatment control condition evidenced an increase in homesickness and no changes in satisfaction with life and connectedness to campus.

Results of both the feasibility study and the experimental study support the use of AAT programs to increase the well-being of first-year university students experiencing homesickness.

# Animal-assisted intervention for autism: A systematic literature review (2012-2015)

**MARGUERITE O'HAIRE**

[mohaire@purdue.edu](mailto:mohaire@purdue.edu)

*Purdue University, West Lafayette, Indiana, USA*

## INTRODUCTION

The prevalence of animal-assisted intervention (AAI) for autism is increasing in both research and practice. Given the multidisciplinary nature of research on AAI, it is important to periodically collate findings across a broad range of fields of study. The overall goal of this review was to systematically identify and synthesize all published, empirical research on AAI for autism between 2012-2015. The specific aims were to: (a) describe the characteristics of AAI for autism, (b) evaluate the evidence base, and (c) summarize the reported outcomes.

## METHODS

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used to perform this review across seven electronic databases. The study procedures were defined a priori in a protocol that specified the search strategy, inclusion criteria, and data extraction items.

## RESULTS

A total of 28 studies met the inclusion criteria. Species included horses (n = 12), dogs (n = 11), guinea pigs (n = 3) and dolphins (n = 2). Programs generally included one animal per participant, with a total contact time of approximately 10 hours over 8-12 weeks. Research methodology was varied, with some improvements from the last systematic review (1989-2012; O'Haire, 2013) to the current review (2012-2015), including larger sample sizes ( $\leq 42$  versus  $\leq 164$ ), the use of active or attention control conditions (7% versus 43%), standardized outcome measures (36% versus 82%), blinded raters (14% versus 21%), and physiological assessments (7% versus 18%). The most commonly reported outcome was increased social interaction, identified in 22 studies by 19 research teams across 14 countries.

## CONCLUSIONS

Based on the existing evidence from 28 studies, the provision of AAI for autism should be viewed as a complementary activity for autism that may increase social interaction. Further research should focus on refining AAI techniques, identifying optimal circumstances for positive change as well as individuals that may not benefit, and independent replication of high quality studies to move AAI from its current status as an enrichment activity to an evidence-based practice.

O'Haire, M. E. (2013). Animal-assisted intervention for autism spectrum disorder: A systematic literature review. *Journal of Autism and Developmental Disorders*, 43(7), 1606-1622.



# Dog Assisted Activities in elementary school in Greece. Effects on the students' self-esteem, school progress, adaptation and depressive symptomatology

**EVANGELOS DIAMANTAKOS**, George Kleftaras

[vdiamantakos@gmail.com](mailto:vdiamantakos@gmail.com)

*University of Thessaly, Volos, Greece*

This present study is part of the first Animal Assisted Activities Programme research conducted in an educational setting in Greece. It is part of a PhD thesis following a pilot study (Diamantakos & Kleftaras, 2012) that was conducted having as participants kindergarten pupils.

The study of student - dog interaction is an area of increased scientific interest. This paper describes the introduction of a Dog Assisted Activities Programme in an elementary school as part of a weekly based routine lasting for one hour. Moreover, it presents the effects this programme may have on the students' self-esteem, school progress, adaptation and depression symptomatology.

In the study participated 45 students (19 in the experimental group and 26 in the control group) aged 9.1 to 10.11 years. The experimental group followed the 'normal' scheduled school programme and interacted with a dog for one hour, on a weekly basis for a period of two months. The control group followed the 'normal' scheduled school programme with no any dog interaction. During the sessions the pupils interacted with the dog both individually and in groups. The researcher, in co-operation with his assistant who was handling the dog, was presenting the dog obedience commands (sit, down, heel, etc.) which were then executed by the pupils.

The data was collected through four standardised questionnaires measuring students' self-esteem, school progress, adaptation and depressive symptomatology. The study is currently at the stage of data analysis. However, according to the initial findings, it seems that the pupils - dog interaction is beneficial for all four previously mentioned areas of study. Future studies are needed for a better insight in this area of research.

Diamantakos, E. Kleftaras, G. 2012. The effects of Animal Assisted Activities Programmes on the mental health, school performance and adaptation in the school environment of kindergarten pupils. 4o Pan-Hellenic Congress of Counselling Psychology, Thessaloniki, Greece

# Animal-assisted activity as a non-pharmacological intervention to treat depression and agitation, and improve quality of life in patients with dementia

**CHRISTINE OLSEN<sup>1</sup>**, Astrid Bergland<sup>3</sup>, Marie-José Enders-Slegers<sup>2</sup>, Grete Patil<sup>1</sup>, Camilla Ihlebæk<sup>1</sup>  
[christine.olsen@nmbu.no](mailto:christine.olsen@nmbu.no)

1. Norwegian University of Life Sciences, Ås, Norway
2. Open University of The Netherlands, Heerlen, The Netherlands
3. Oslo and Akershus University College, Oslo, Norway
4. Østfold University College, Fredrikstad, Norway

## INTRODUCTION

As population ages, health and social care face increased demands to provide services for older people with dementia. Depression and agitation is found to be the most common symptoms of dementia, and as they increase, they will affect patients' quality of life (QoL). Medication is frequently used, but most of them have major side effects. Therefore, it has been suggested that non-pharmacological interventions should be implemented at a larger scale. In this study, possible effects of a 12-week intervention with animal-assisted activities (AAA) in nursing homes was studied. Primary outcomes were depression, agitation and QoL.

## METHOD

A prospective, cluster randomized multicentre trial. Data collection was carried out at baseline, after 12 weeks (post-test), and three months after end of intervention (follow-up).

## SAMPLE

Ten nursing homes were randomized to either AAA with a certified dog (n=28) or control group with treatment as usual (n=30). Inclusion criteria were men and women aged 65 years or older, with a diagnosis of dementia or cognitive impairment. There were 26 complete cases in the control group (65.4% women), and 25 in the intervention group (60% women). The mean age was 84.1 years in the control group, and 82.9 years in the intervention group. The intervention consisted of a 30 minutes session with AAA twice a week for 12 weeks in groups of 5-7 participants, led by a qualified dog handler.

## RESULTS

Mixed model was used to investigate changes over time and differences between the intervention group and the control group. No effect on agitation, which in general was very low, was found. Significant effect on both depression and QoL was found for participants with severe dementia. For depression, the effect was found at follow-up ( $p = .001$ ) ( $p = .054$  post-test). Furthermore, the effect of depression was found to have clinical significance ( $p = .03$ ). A significant effect of AAA was found at post-test ( $p = .035$ ) as well as at follow-up for QoL ( $p = .003$ ).

## CONCLUSIONS

AAA may have a positive effect on QoL and symptoms of depression in elderly people with dementia, especially those in a late stage.

# A research strategy for documenting and measuring the effects of animal- and nature-based therapies in complex environments such as Green Chimneys

**KEVIN MORRIS<sup>1</sup>**, Phillip Tedeschi<sup>1</sup>, Megan Mueller<sup>2</sup>, Steven Klee<sup>3</sup>, Michael Kaufmann<sup>3</sup>

[kevin.morris@gmail.com](mailto:kevin.morris@gmail.com)

1. University of Denver, Denver, CO, USA
2. Tufts University, North Grafton, MA, USA
3. Green Chimneys, Brewster, NY, USA

Green Chimneys is a school serving more than 200 students with special psychosocial and educational needs. The therapeutic day and residential school programs employ a Positive Youth Development (PYD) model of treatment within a unique context that incorporates animals (both domestic and wildlife), plants and the natural environment throughout its campus and programs. Youth showing high levels of the Five Cs of PYD – Competence, Connection, Confidence, Character and Caring – have been shown to demonstrate fewer personal, social and behavioral problems, reduced risk behaviors and improved educational outcomes (Lerner & Lerner, 2011). This Five Cs PYD model is being used as a framework to document and measure the impacts of the aggregate and individual programs within this complex environment.

First, a highly detailed program flow chart is being used to document all of the therapeutic programs at Green Chimneys. Documentation includes the program area, target population, therapeutic goals, a detailed description of the intervention or activity and the supporting scientific literature. Next, the impacts of the aggregate Green Chimneys experience for each student will be tracked in a longitudinal study using a validated self-report instrument that was employed in a seven-year study assessing PYD in early through late adolescence (Lerner & Lerner, 2011). Additional work within this study linked interactions with animals to individual components of the Five Cs associated with thriving youth (Mueller, 2014). The self-report PYD instrument is being modified and validated for use in the specific age ranges and diagnoses present at Green Chimneys.

Finally, the impacts of individual programs, interventions and activities will be measured using a wide variety of study designs and instruments that tie back to the PYD framework. This approach can serve as a model for studying complex therapeutic environments that involve overlapping animal- and nature-based interventions and activities.

Lerner, R. M., & Lerner, J. V. (2011). Report of the findings from the first seven years of the 4-H study of positive youth development.

Mueller, M. K. (2014). Is human-animal interaction (HAI) linked to positive youth development? Initial answers. *Applied Developmental Science*, 18(1), 5-16.

# Session 3A

# The effects of video footage versus photographs on perception of dog temperament

**LUCY CLARKE**, Chloe Pyzer, Tamara Montrose

[Tamara.Montrose@Hartpury.ac.uk](mailto:Tamara.Montrose@Hartpury.ac.uk)

*Anthrozoology Research Group, Department of Animal and Land Sciences, Hartpury University Centre, UK*

Photographs are frequently used to promote adoption of dogs on rescue shelter websites, however whilst physical traits can be well illustrated via photographs, conveying a dog's temperament is more problematic. Behavioural traits such as sociability, obedience and friendliness can impact on likelihood of adoption. These traits are likely to be better displayed via video footage. The use of video may therefore have a greater impact on adopters than photographs by enabling desirable behaviours to be viewed and so conveying a more positive view of the dog's temperament.

Four dogs from a Gloucestershire Rescue Shelter (two desirable breeds: 5 year old female toy Poodle; 5 year old female Cavalier King Charles Spaniel-Chihuahua cross; two from a stigmatized breed: 11 year old male and 3 year old female Staffordshire bull terriers) were individually photographed and a 30 second video of each was recorded. Two questionnaires were produced containing alternating videos/photographs such that each questionnaire contained the same dogs but presented in different media. British participants (Questionnaire 1: n= 363; Questionnaire 2: n= 372) rated their agreement with 12 statements relating to their perception of the temperament of the dog seen. The effects of viewing videos or photographs on perception of the dog's temperament was analysed in SPSS using the Mann Whitney U test.

Viewing dogs in videos tended to result in more positive perceptions of the dogs' temperament. Dogs viewed via video were considered to be more trainable, intelligent, friendly and gentle and less dominant, aggressive and unsociable than when viewed via photograph. This was also observed individually in both desired and stigmatized breeds. The perceived temperament of a dog is an important factor when adopting an animal. These findings suggest that greater use of video footage by rehoming shelters could help promote adoption of dogs.

# An Appetite for Dogs: Consuming and Loving Them in Vietnam

**ANTHONY PODBERSCEK**

[anthony.podberscek@sydney.edu.au](mailto:anthony.podberscek@sydney.edu.au)

*University of Sydney, Sydney, Australia*

Very little has been written on people's attitudes to dogs in Vietnam. To address this, we collected data in two ways.

Firstly, information on the history and current status of dog use and consumption was sourced from academic literature, newspaper reports, and animal welfare organizations. Secondly, Market & Opinion Research International (MORI) was contracted to survey 1,000 adults (15 years and above) in the cities of Hanoi and Ho Chi Minh City about their attitudes to the roles that dogs had in their society and whether they would support a ban on eating certain animals, including dogs. In terms of uses of dogs, people were asked, "To what extent do you approve or disapprove of the use of dogs as: guard dogs, guide dogs, pets/companions, in medical experiments, as food for humans, as ingredients in health tonics, as ingredients in medicine, and for their fur."

The possible responses ranged from strongly approve to strongly disapprove. In terms of banning the eating of certain animal species, respondents were asked, "How strongly would you support or oppose a ban on eating the following animals?— cat, chicken, cow, dog, fish, monkey, pig, sheep." The possible responses ranged from strongly support to strongly oppose. Of the participants, 46% were male and 54% were female, and 52% owned pet animals.

Overall, people supported the use of dogs as pets, as assistance animals and as guard dogs, but were against the use of dogs as food. In line with this, most would support a ban on the eating of dogs. However, there was a major difference between the two cities: the majority of people living in the north (Hanoi), as apposed to the south (Ho Chi Minh City), were actually supportive of using dogs for food and would not support a ban on the eating of dogs. This reflects the history of the country: much of the north was ruled by Chinese for around 1,000 years until AD 938, and many of their customs were assimilated, including dog-eating. Cultural studies like this help move us toward a more complete understanding of people's attitudes toward animals.

# A moveable beast: subjective influence of human-animal relationships on risk perception and behaviour during bushfire threat

**JOSHUA TRIGG<sup>1</sup>**, Kirrilly Thompson<sup>1</sup>, Bradley Smith<sup>1</sup>, Pauleen Bennett<sup>2</sup>

[j.trigg@cqu.edu.au](mailto:j.trigg@cqu.edu.au)

1. *Appleton Institute for Behavioural Science, Central Queensland University, Wayville, South Australia, Australia*

2. *School of Psychological Science, La Trobe University, Bendigo, Victoria, Australia*

Companion animals exist externally as physical companions-as ‘moveable beasts’ carried with a person, but also internally as relational experiences. In the event of disaster there is a need to understand their influence as motivators and inhibitors of appropriate animal-management behaviour. This point was reemphasised by severe bushfires that impacted animal guardians in South Australia in 2015. The idea that psychological bonds with companion animals influence behaviour during disasters is well accepted. However, subjective interpretations of these bonds by guardians are relatively underexamined. We proposed that the ways in which connections with pets and other animals are experienced would influence different forms of safety-risk perception and behaviour when guardians manage animals’ welfare in the face of disaster threat.

Through in-depth semi-structured interviewing of 25 fire-affected companion-animal guardians (female = 76%, Mage = 30.08, SD = 12.41), this study examined influences on risk perception and behaviour involving the protection and relocation of companion and other pets (including dogs, cats, ducks, chickens, goats, sheep). Interviewing elicited information about attitudes towards the value of animal life, the constellation of human-animal bonds within families, animal-derived supportive functions, perceptions of autonomy and control, information needs, and their influence on actual risk-taking behaviour. Interview transcripts and field notes were subjected to thematic and critical-incident analysis.

We found that decisions about how to manage animal welfare during bushfire were framed by five major themes: 1) ‘absolute and relative’ stated attitudes towards animal life and risk, which sometimes conflicted with revealed attitudes; 2) the supportive ‘roles of animals in family life’; 3) the importance of ‘unique constellations of bonds’ within the household; 4) ‘autonomy, control, and vulnerability’; and 5) ‘action paralysis,’ or the tendency to become overwhelmed by a threatening event and uncertainty about response.

Findings show how certain subjective facets of human-animal relationships that are influential upon risk perception and behaviour can add to existing understanding of animals’ effects on human protective behaviour during disaster. Lastly, we present implications for future research in decision-making and risk tendencies of animal guardians facing disaster threat alongside pets.





# Which animals do we save and why? Factors that influence people's willingness to pay for the conservation of endangered species

LIVIA APOSTOL<sup>1,3</sup>, Ionel Papuc<sup>1</sup>, Mircea Miclea<sup>2</sup>

[livia.apostol@usamvcluj.ro](mailto:livia.apostol@usamvcluj.ro)

1. University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania

2. Babes-Bolyai University, Cluj-Napoca, Romania, 3The Romanian Society for Anthrozoology, Cluj-Napoca, Romania

Research in conservation psychology highlighted some factors that appear to influence people's willingness to pay for the conservation (WTPC) of endangered animal species (e.g. class, similarity to humans), but the way such variables interact remains unclear.

Thus, we investigated the intertwined relationship between animal characteristics (class), perceived similarity to humans (anthropomorphic thinking), emotional involvement (empathy) and behavioral intent (WTPC) in a series of two experiments.

Both studies were conducted online, on convenience samples, using a survey software that allowed the randomization of participants in one of four experimental groups.

Subjects in Study 1 (N=225, 65.8% women, M age=36.32, SD=12.611) were presented with one of four descriptions of the same fictional, but realistically described, newly discovered and endangered animal species (*Tartrix pavonia*). Descriptions differed only in terms of animal class and attributes: anthropomorphically (G1) or neutrally described (G2) mammal and anthropomorphically (G3) or neutrally described (G4) reptile. Participants were then asked to imaginarily contribute a sum of money (max. 100 Euros) to support conservation efforts. Our ANOVA analyses showed a significant interaction effect  $F(1, 224)=5.514, p=.020$  suggesting that people will donate equally to mammals and reptiles if mammals are described anthropomorphically and reptiles neutrally.

Participants in Study 2 (N=111, 68.5% women, M age=39.21, SD=13.21) followed a similar procedure: they were randomly assigned to read a neutral (G2,4) or anthropomorphic (G1,3) description of animal species *Narrus antiopa* and were instructed to either empathize (G1,2) to their survival issues or be objective (G3,4). A manipulation check was performed and then fictitious donations were registered. Analyses suggest that an anthropomorphic description earns as much money, regardless of the instructions on empathy, but a neutral description requires high empathy instructions in order to match the same donation levels ( $F(1, 110)=4.348, p=.039$ ).

Corroborating these results, we concluded that presenting any animal in neutral (biological) terms and activating empathic feelings toward it, might attract the most funding. The present studies could contribute to the development of effective fundraising campaigns for biodiversity conservation.

# Exhibit Labels in Zoos: Comparison between the Classic and the Interactive

**NOËLLA IGLESIAS<sup>1</sup>**, Miquel Llorente<sup>1,2</sup>

[miaigle@hotmail.com](mailto:miaigle@hotmail.com)

1. *Fundacio Mona, Riudellots de la Selva, Spain*

2. *IPHES, Tarragona, Spain*

Ever since zoological parks first came into existence their main goal has been to exhibit wild animals to privileged members of society. Nowadays, a zoo has three main goals: conservation, research and education. Education is made through different ways such as exhibit labels.

In this paper only two different types of exhibit labels will be studied: the classic and the interactive. Two different labels, two different ways to learn information. But what will happen if we let the visitors choose between them? Will they choose one significantly more than the other? If we look in the few studies about the different type of labels, it seems that an interactive label will attract more visitors. So, during July 2015, data were collected 4 hours/day, 1h30 in the morning, and 2h30 in the afternoon with the objective to confirm or reject this hypothesis. A total of 68 hours were collected, with 1875 visitors. These 1875 visitors were divided in 586 groups and formed by: 668 children (299 ♀, 369 ♂), 234 adolescents (110 ♀, 124 ♂), 742 adults (409 ♀, 333 ♂) and 231 seniors (139 ♀, 92 ♂).

Data analysis was structured in three parts: Descriptive statistics; Labels first attraction; and Behavior's duration. And, as we expected, it has been found that the interactive label was significantly more attractive than the classic one, without any individual characteristic with a significant effect. Never mind the age, sex or type of group the visitor is with, they have tendency to focus significantly more their first interest on the interactive label (with a proportion of 80% for the interactive one, and 20% for the classic one). Visitors also used to interact more time with the interactive label.

Here, an individual characteristic with a significant effect has been found: the children's presence in the group. Other interesting result: it has been found a correlation between the time of lecture of the classic label and the time of manipulation of the interactive one. More visitors manipulated, less they read, which it has to be taken in consideration when the labels' allocation in the zoo is made.

# “It’s hard to eat a friend”. How goat owners confront the friend/food dilemma

**LEE ZASLOFF**

[zasloff@arc.losrios.edu](mailto:zasloff@arc.losrios.edu)

American River College, Sacramento, CA, USA

Most people who eat meat also say they care about animals, thus creating a “meat paradox”— the idea that enjoying meat requires that animals be harmed (Loughnan, Haslam, & Bastian, 2010). Several studies have looked at how meat eaters reduce the cognitive dissonance created by their concern for animals and the fact that they eat animals. The current study looks at a conflict faced by people who raise livestock: the “friend/food dilemma” (Zasloff, 2010) – the conflict faced by many people who keep livestock and eat the animals they raise.

The friend/food dilemma was explored in a study of 392 goat owners who participated in an online survey in January 2010. The study looks at how the owners avoid attachment to the goats used for meat. The respondents (85% female, 15% male) ranged in age from 12 to 80. Nearly 97% of respondents reported feeling emotionally attached to at least some of their goats. Almost two thirds said they eat goat meat and 30% of the owners who responded to the question about attachment avoidance (n=377) said they avoid becoming attached to at least some of their goats.

To examine attachment avoidance, a text analysis was conducted of responses to two open-ended questions about the owners’ attachment to their goats. The analysis identified five ways that the goat owners attempt to avoid attachment:

- raising the meat goats differently
- giving them food names or no names
- limiting interactions with the meat goats
- keeping emotional distance
- maintaining mental detachment

Goat owners report that goats are highly engaging animals with wonderful personalities to whom they become strongly attached. Those who face the friend/food dilemma must come to terms with the fact that some of their animal friends may ultimately become dinner.

Loughnan, S., Haslam, N., & Bastian, B. (2010). The role of meat consumption in the denial of moral status and mind to meat animals. *Appetite*. 55, 156-159.

Zasloff, R. L. Why people get their goats: Exploring the human-caprine relationship. Presented at the International Society for Anthrozoology 19th International Conference on Human-Animal Interactions, Stockholm, Sweden, July 30th, 2010.

# Session 4A

# Sit and Stay, Chloe: Popular Human Names as Dog Names in Contemporary New York

MICHAL PIOTR PREGOWSKI<sup>1</sup>, Przemyslaw Szalaj<sup>2,3</sup>, Robert W. Mitchell<sup>4</sup>

[m.pregowski@ans.pw.edu.pl](mailto:m.pregowski@ans.pw.edu.pl)

1. *Warsaw University of Technology, Warsaw, Poland*
2. *Center for Bioinformatics and Data Analysis, Medical University of Bialystok, Bialystok, Poland*
3. *I-BioStat, Hasselt University, Hasselt, Belgium*
4. *Eastern Kentucky University, Kentucky, USA*

The unique social status of companion animals is reflected in our tendency to name them, especially when a human name is used for that purpose. According to Thomas (1983), the social convention of giving baby names to companion animals started in the West as early as in the 18th century. However, little research has examined this phenomenon.

Our research concerns the dog guardians' naming choices in the bustling metropolis of New York City. We used the contents of two reliable, official, open-access databases from 2011: (1) the baby birth registry made available by the City of New York ([www.data.cityofnewyork.us](http://www.data.cityofnewyork.us);  $n < 203,000$ ); (2) dog license data provided by the NYC Department of Health and Mental Hygiene ( $n = 6729$ ). The same year (2011) was used for appropriate comparison. The data were analyzed to determine (a) how often popular human names are used as dog names; (b) which names are popular as baby and dog names alike; (c) which breeds are more "prone" to being given human names; and (d) whether there is a stronger tendency to use masculine or feminine human names for naming dogs.

The results show that 27% of dog names mirror human names, although a significant number of old-fashioned ones (e.g. Holly, Otis) did not appear in the baby registry yet emerged as dog names. A significant gender-related difference was observed: 35% of all female dogs were given names from the baby birth registry, compared to only 22% of males. While some of the most popular girl names of 2011 were also very popular dog names (Mia: #4 vs. #7; Chloe #7 vs. #9, Zoe #19 vs. #21), the same was not true for males (at #17, Lucas was the most popular boy name for dogs, ranked there at #31). This tendency was particularly visible in breeds such as Yorkshire Terrier, Boston Terrier and the Maltese. Furthermore, as many as 9 of the 20 most popular boy names lacked any presence in the canine database, compared to merely 3 of the top 20 girl names. Among breeds more likely to be given human names were pugs, and Golden and Labrador Retrievers.

# Winning Personalities: Concern for purebred health risks does not impact breed choice

**BETH DALY**, Julia Colella, Tania Signal

[bethdaly@uwindsor.ca](mailto:bethdaly@uwindsor.ca)

University of Windsor, Windsor, Ontario, Canada

Health problems in purebred dogs have been the focus of recent research (Farrell et al., 2015; Hedhammar, Malm, & Bonnett, 2001). However, a pilot study revealed that individuals appear to have an equal preference for purebred dogs (PB) and mixed breed dogs (MB), despite their beliefs that mixed breeds are healthier, and that certain preferred breeds have significant health risks.

Using Facebook to solicit international participation, 404 adults were asked about their preference for companion dog breeds, their history and current status of dog ownership, and a series of questions about their knowledge of dog health, and breed-specific health issues. Among owners with one dog (19%), 51% had a PB; of those with more than one dog (59%), 76% had a PB. Interestingly, the majority of respondents (77%) indicated that although they believed certain breeds were prone to specific health problems, 47% nevertheless intend to opt for those very breeds as future pets, the three most popular being German Shepherds (GS) (14%) Labrador Retrievers (LR) (8%), and Pugs (7%). Moreover, there is the interesting trend that personality and general attraction to the breed (47%) greatly outweigh the belief that there are “healthy breeds available,” as indicated by only 13% of the population.

While the study was largely descriptive, the results nonetheless indicate that a breed’s ascribed personality traits may trump concerns for health problems. Given that almost 70% indicated they knew “quite a bit” or “a lot” about dogs, campaigns to raise awareness regarding dog health may not have an effective impact when it comes to breed choice. It underscores that educational efforts might be ineffective, and raises the question of whether dog personality, which is of extrinsic value to humans, comes at the expense of dogs’ well-being, and is of intrinsic value to dogs.

Farrell, L., Schoenebeck, J., Wiener, P., Clements, D., & Summers, K. (2015). The challenges of pedigree dog health: approaches to combating inherited disease. *Canine Genetics and Epidemiology* 2: 1-14.

Hedhammar, O., Malm, S. & Bonnett, B. 2011. International and collaborative strategies to enhance genetic health in purebred dogs. *The Veterinary Journal* 189: 189-196.

# Purebreds are Like Unicorns: Understanding the Breed Ancestry of Shelter Dogs & the Influence of Breed Labels on Potential Adopter Perception

**LISA GUNTER**, Rebecca Barber, Clive Wynne

[lisa.gunter@asu.edu](mailto:lisa.gunter@asu.edu)

Arizona State University, Tempe, AZ, USA

Dog breed identification in shelters is often based upon the relinquishing owner's claims or determination by staff, but discrepancies have been found between breed identification assessed by welfare agencies and the results of DNA analysis. Previous research has indicated that certain breeds of dogs stay longer in shelters. Exactly how breed perception and identification influence adopters' decisions remains unclear.

In this presentation, I will discuss the findings of recent studies from the Canine Science Collaboratory in which we've investigated the influence of breed labels on people's perceptions of pit-bull-type dogs, their length of stay at the shelter and adoption success. Our findings suggest that breed labeling influences potential adopters' perceptions and decision-making, and that removing breed labels is a relatively low-cost strategy that will likely improve outcomes for dogs in animal shelters.

I shall also report the results of nearly nine hundred breed ancestry tests carried out on dogs living in shelters. We found that shelter dogs show a wide range of breed diversity with nearly 80% of the dogs having more than two breeds identified in their breed heritage. While shelter staff correctly identified dogs' primary breeds roughly half of the time compared to DNA analysis, they were only able to completely match mixed breed and purebred dogs less than 20%.

In all, these results provide evidence that the breed identification of mixed breed dogs in animal shelters is inherently complex and that the current practice of two-breed labeling is inadequate to describe the vast majority of shelter dogs.





# Public perception of urban feral cats and their management in Barcelona

SUSANA PÉREZ<sup>1,4</sup>, Paula Calvo<sup>1,2</sup>, Jonathan Bowen<sup>1,3</sup>, Antoni Bulbena<sup>1,2</sup>, Jaume Fatjó<sup>1,2</sup>

[pcalvoetologia@gmail.com](mailto:pcalvoetologia@gmail.com)

1. Chair Affinity Foundation Animals and Health, Universitat Autònoma de Barcelona, Barcelona, Catalonia, Spain
2. IMIM (Hospital del Mar Medical Research Institute), Barcelona, Catalonia, Spain
3. Royal Veterinary College, North Mymms, Hertfordshire, UK
4. Plataforma Gatera, Barcelona, Catalonia, Spain

## INTRODUCTION

According to the city council official census, there are approximately 10,000 feral cats in Barcelona, forming 625 controlled colonies. Nevertheless, the public opinion about the presence of feral cats in the city is very often a matter of controversy. A study was designed to explore citizens' perception of the presence of feral cats in Barcelona and of the program to control urban colonies.

## METHODS

A survey was conducted on the street in Nou Barris, a high-density population neighbourhood, with approximately 1200 feral cats living in 69 colonies. We developed a 17-item questionnaire, divided into 4 sections: demographic characteristics, perception of the presence of cats in the city, perception of people and organizations taking care of feral cats, and awareness about the cat population control program conducted by the city authority.

## RESULTS

We collected 105 complete surveys. Participants were mainly women (71%), older than 35-years-old (70%), and 48% owned a pet. Eighty-seven per cent of participants agreed with the statement "I like animals". Eighty per cent thought the presence of cats was low or moderate and 3% excessive. Twenty per cent of respondents declared they liked having feral cats in the city. Fifteen per cent of respondents said that they were bothered by people taking care of feral cats, but 90% agreed with the spending of public resources on taking care of feral cats. Although 70% of participants knew someone who took care of feral cats, 45% were not aware of the existence of a structured public program to control cat colonies. Preferred strategies to control feral cat populations included health control (88%), neutering (85%) and adoption (85%). Three per cent thought euthanasia was a valid method to control urban feral cats.

## CONCLUSION

Our results suggest a positive public perception about the presence of feral cats in the city and the strategies to take care of them. Nevertheless, there is relative lack of awareness of the public programs to control feral cats, which indicate the need for a more active communication strategy by the city authority.

# Primates, pathogens, and biophilia: How tourists present risks of infectious diseases to monkey and ape conservation

**MICHAEL MUEHLENBEIN**

[michael.muehlenbein@utsa.edu](mailto:michael.muehlenbein@utsa.edu)

*University of Texas at San Antonio, San Antonio, Texas, USA*

Humans have contributed to significant population declines of wild primates through hunting and bushmeat consumption, habitat loss and fragmentation, and illegal capture of live primates for entertainment or other purposes. Pathogen transmission from humans to nonhuman primates is arguably one of the most dangerous outcomes of human-wildlife interactions. While tourism activities involving primates may benefit primate conservation through awareness and funding, these species are particularly vulnerable to anthroponoses (infectious pathogens spread from humans to nonhuman animals).

To understand better why travelers are willing to participate in risky behaviors associated with primate-based tourism, a detailed questionnaire was created to capture information on travel health knowledge, attitudes, and practices, current health symptomology, immunization status, opinions on primate-based ecotourism, general conservation awareness, and willingness to take risks. Survey responses were collected from over 5000 tourists in Malaysia (visitors to view orangutans at the Sepilok Orangutan Rehabilitation Centre: Sandakan, Sabah, Borneo), Japan (visitors to view Japanese macaques at the Takasakiyama Monkey Park: Beppu, Kyushu), South Africa (visitors to view animals at the Monkeyland Primate Sanctuary: Plettenberg Bay), and St. Kitts (visitors to view the vervet monkeys at the beach bars).

Results suggest significant cultural variation in desire to have direct contact with primates (including touching and feeding) and primate pet ownership. A varying degree of people understand that humans can give and get diseases to and from wild animals. Concerns about environmental problems do not appear to limit planned activities involving wildlife; attraction to wildlife may cloud judgment of potentially risky behaviors. Responsible tourism requires a more informed traveler, which may be accomplished through commercial travel websites and other media. Health regulations at most primate-tourism destinations are unadvertised or unenforced. The majority of tourists that visit primates in their native habitats underestimate their own risk of infection, as well as their potential contribution to the spread of diseases. Even conservation-oriented tourists who select travel itineraries that take them to view endangered species may be largely unaware of their potential impact on the health of the wildlife they visit.

# Examining Lesser Known Risk Factors in Animal Harm

**JOANNA BECKER**

[joannalbecker@gmail.com](mailto:joannalbecker@gmail.com)

*Sam and Myra Ross Institute, Brewster, NY, USA*

The majority of research on children who exhibit aggression towards animals has focused on children with conduct disorders (CD) or related antisocial tendencies. In contrast, much less attention has been paid to children without symptoms of CD who possess potential risk factors for aggressive behaviors toward animals, including children with poor impulse control and developmental delays. Further, there is evidence that clinicians are significantly less likely to address harm toward animals when CD is not indicated (Signal et al., 2013). The purpose of the current review was to provide data on reports of inappropriate animal interactions in children without CD, based on referrals to a specialized assessment team at a therapeutic school for children with emotional and behavioral disorders. The main objectives were to increase awareness of the multiple risk factors that contribute to children's maladaptive interactions with animals; and to increase the likelihood that service providers recognize and intervene in such interactions when they occur.

Consistent with the risk factors described by Ascione (2008), children referred for assessment were frequently described as impulsive and easily frustrated. Diagnostic data revealed that the children carried a range of diagnoses, including Autism, mood disorders, and trauma-related disorders. Significant intellectual impairments were found in approximately 50% of cases. Independent of diagnoses, the majority of children referred had experienced a traumatic event. The most common referrals were for incidents of aggression or rough handling that occurred when the child was emotionally dysregulated.

The data reviewed provide preliminary insight into the range of risk factors for maladaptive interactions with animals. A greater range of diagnostic profiles and behaviors were represented in the referrals than would likely be expected from the existing research. The reporting rates may be partially attributable to explicit staff training on recognizing inappropriate interactions. It is suggested that the scope of previous research has been limited by a focus on intentional harm, leaving reactive aggression or unintentional harm largely unexamined. Although interventions will clearly vary based on context, there is a need to broaden service providers' awareness that animal-harming behaviors can be displayed and require intervention in children without antisocial tendencies.

# Session 5A

# Animal Sentience: The influence of beliefs about animal mind on positive and negative child-animal interactions

**ROXANNE HAWKINS**, Joanne Williams

[s1477956@sms.ed.ac.uk](mailto:s1477956@sms.ed.ac.uk)

*School of Clinical and Health Psychology, University of Edinburgh, UK*

Children and animals can have a great impact on each other's lives, yet we are only just beginning to understand the underpinnings of these relationships. Beliefs about animal minds or believing that non-human animals are sentient, may have a great influence on these relationships. This study aimed to investigate the relationship between children's beliefs about animal minds (Child-BAM) and measures relating to positive and negative interactions with animals.

A questionnaire-based survey, comprising of a variety of measures relating to child-animal relationships was administered to primary school children during class time by school teachers. A total of 1,217 (51% boys, 49% girls) children aged 6-13 years from 24 schools across Scotland participated. Results from linear regression showed that children's beliefs about animal mind was positively related to attachment to pets ( $F(1,1081)=38, p<.001$ ), compassion toward animals ( $F(1,1047)=17, p<.001$ ), reported humane behaviour ( $F(1,1069)=31, p<.001$ ), caring behaviour ( $F(1,1068)=15.7, p<.001$ ), emotional attachment to animals ( $F(1,1068)=8.7, p<.005$ ) and positive attitudes towards animals ( $F(1,970)=64, p<.001$ ). A negative relationship was found between children's beliefs about animal minds and attitudes towards intentional cruelty ( $F(1,1080)=12, p<.005$ ), unintentional cruelty ( $F(1,1080)=7, p<.05$ ) and animal neglect ( $F(1,1080)=6.7, p<.05$ ).

Results from one-way ANOVA and t-tests showed that pet ownership, including number of pets ( $F(3,1120)=3.59, p=0.013$ ) and whether children had a pet of their own ( $t(1111)=-2.41, p=0.016$ ) influenced children's beliefs about animal mind, as did age ( $t(1084)=4.39, p<0.001$ ) but not gender ( $t(1124)=0.93, p=0.36$ ). Children rated dogs as the most sentient non-human animal.

Teaching children about the complex cognitive and emotional lives of non-human animals may have great potential for promoting positive interactions and for preventing negative interactions with animals, including animal cruelty. Research into this relatively new area of scientific study of child and animal relationships is encouraged to continue and progress.

# Cognitive and Affective Factors in Children's Perception of Animals

STEPHEN ALBONE<sup>1</sup>, Maryanne Kagai<sup>2</sup>, Dennis Makau<sup>2</sup>

[stephen@spana.org](mailto:stephen@spana.org)

1. Society for the Protection of Animals Abroad, London, UK
2. African Network for Animal Welfare, Nairobi, Kenya

Promoting Animal Welfare in Schools (PAWS) is a collaborative initiative between SPANA and ANAW to provide humane education in Kenyan primary schools through an extra-curricular club programme. The aim of the programme is to develop children's cognitive and affective perception of animals and thereby promote behaviour that will positively impact on the welfare of animals that they come into contact with.

In order to evaluate the effectiveness of the programme a Caring for Animals test battery was developed which comprised seven self-report measures of the children's perception and interaction with animals; zoocentric attitudes, biological understanding, sympathy and compassion, feelings towards animals, empathy, belief in animal emotions and familiarity with domestic animals. Data were gathered from 406 children from the older cohorts of ten Kenyan primary schools (median age = 11 years). Rasch modelling was used to produce interval level estimates for each measure.

A principal axis factor analysis with varimax rotation was undertaken to assess the underlying structure of the battery. An initial two-factor solution was generated which accounted for 40% of the variance. It was found however that zoocentric attitudes did not load strongly onto either factor ( $h^2 = 0.15$ ). A second two-factor model was generated, omitting zoocentric attitudes, which accounted for 45% of the variance. Two measures, feelings towards animals and empathy, loaded on to both common factors. The first factor was uniquely associated with biological understanding and sympathy and compassion. This factor appears to represent a concern for animal welfare that reflects the children's affective perception of animals. The second factor was uniquely associated with belief in animal emotions and familiarity with domestic animals. This factor seems to represent a cognitive perception of animals that is mediated through anthropomorphism.

These results support the idea that children's perception of animals has independent cognitive and affective factors. There is no suggestion that this study provide insight into how children are likely to behave towards animals. However these data do raise the question as to how behaviour is influenced, not only by the absolute magnitudes, but also by the magnitude of each factor relative to the other.

# How we can teach children and parents dogs' body language

**KERSTIN MEINTS**, Victoria Brelsford, Janine Just

[kmeints@lincoln.ac.uk](mailto:kmeints@lincoln.ac.uk)

University of Lincoln, Lincoln, UK

With bite figures from interview data as high as 47% (Beck & Jones, 1985; Spiegel, 2000), and National Health Service statistics showing significant increases in recent years (HSCIS 2014), we are addressing a serious and wide-spread problem. To enable safe interaction between humans and dogs, it is vital that children and adults interpret dogs' signalling correctly. However, they often do not understand dogs' body signalling (Reisner & Shofer 2008), and children confuse fearful or angry dogs with friendly ones (Meints, Racca & Hickey, 2010).

This study investigated cross-sectionally and longitudinally how 3-, 4- and 5-year-old children interpret dogs' stress signalling (N = 43, 34 and 36 respectively). We tested at Time 1 (before and after intervention), Time 2 (6 months) and Time 3 (1 year) by showing dog videos according to appeasement signalling (Shepherd, 2002). We investigated children's evaluations of dogs by using a 5-point face scale ranging from happy (1) via neutral to unhappy (5). Parents (N = 33) also took part. Data on dog ownership, SES, demographics, bite incidents was collected.

Results on correct answers show that knowledge improves significantly with age ( $F(3,129)=17.70$ ;  $p<.0001$ ). Risk judgements improved from pre-training at time 1 to other test times ( $F(1,129)=63.17$ ;  $p<.0001$ ). Most significant improvements in learning take place in 5 year-olds and adults ( $F(3,129)=7.55$ ;  $p<.0001$ ). While participants differentiate Distress Judgements ( $F(3,387)=251.69$ ;  $p<.0001$ ), they do not show full awareness. Least distress recognition was shown in 3-year-olds. No main effects for Gender or Dog Ownership occurred.

Error analysis shows errors in all distress categories (high, medium, low). The lower the distress category, the more errors we find. The younger the participants, the more errors occur and the more serious the errors are. We also find significant misinterpretations of highly distressed dogs as "happy". Such errors are significantly reduced after training in all age groups with reduction to no errors in adults. Error reduction follows a different pattern depending on age and distress groupings.

We conclude that successful teaching of dog signalling is possible. Especially children from 4 years onwards show significant improvements in knowledge straight after the intervention and also over time.





# The Horse Sense Project

## The value of using an equine setting to meet therapeutic goals

**AUDREY DARBY**, Kim Heffernan, Jim O'Driscoll

[audreydarby@childvision.ie](mailto:audreydarby@childvision.ie)

*ChildVision National Education Centre for Blind Children, Dublin, Ireland*

There are several pieces of research highlighting the effectiveness of therapeutic activities related to horses. Occupational Therapists in ChildVision decided to explore the benefit of working toward therapeutic goals for children with a visual impairment through the use of horses. The program developed to do this is called the 'Horse Sense Program', which is a weekly group input run over 6 weeks. Background information is gathered, detailed parent interviews take place and goals are set. For the pilot group, the children attended the group in the equine centre in ChildVision for an hour long session once a week for the six weeks.

A research article on a specific pilot study has been submitted to the Irish Journal of Occupational Therapy. Two groups, each with three children, were run and outcomes measures specifically related to the field of Occupational Therapy were used to monitor any changes in targeted areas. Theories underpinning the development of the program included Group Dynamics, Sensory Integration, Model of Human Occupation, and International Classification of Functioning.

The results from the outcome measures and parental reports suggested that this program had a positive impact on all the children's occupational performance in varying degrees. The results also indicated that half of the children learnt to cope better with their sensory processing difficulties. Some of the children's results indicated that there were lasting effects in specific areas at the six week follow up assessment. All parents reported positive changes and have requested to re-engage in the Horse Sense Programme in the future. Since this project, the format of the group has been tried with children with autism. Observations and parental reports suggest that this is a structure that is usable across different client groups and different needs.

This presentation will outline the Horse Sense Program, discuss some of the research results and look at how the program can be adapted to different settings.

# Service Dogs and Veterans: A Phenomenological Study Exploring the Lived Experience

**CHERYL A. KRAUSE-PARELLO, Kristie A. Morales**

[cheryl.krause-parello@ucdenver.edu](mailto:cheryl.krause-parello@ucdenver.edu)

*University of Colorado, College of Nursing, C-P.A.W.W (Canines Providing Assistance to Wounded Warriors), Anschutz Medical Campus, USA, Aurora, Colorado, USA*

A qualitative study was conducted to explore potential constructs relating to the impact of service dogs on veterans. Many veterans reintegrating into civilian life have service connected conditions (e.g., PTSD, TBI). The overarching aim was to explore the impact of service dogs on veterans' health and reintegration into civilian life from their perspectives and lived experiences.

Qualitative semi-structured interviews were conducted with (N=21) veterans who had a service dog, and analyzed using interpretive phenomenological analysis (IPA). The interviews were recorded and transcribed verbatim. Atlas.ti software was used to interconnect and organize the data for the presence of reemerging content and themes. Five superordinate themes emerged from the thematic analysis: Procurement of service dog, psychosocial functioning before service dog, impact of service dog, importance of service dog to veterans' health and reintegration, and issues.

Factors associated with obtaining a service dog after military service were connected to invisible wounds such as PTSD, anxiety, depression, and TBI. The impact of having a service dog was found to reduce symptomology associated with invisible wounds, provide psychosocial support, served as a protective mechanism against suicidal behavior, allowed some veterans to reduce or cease medications for depression/anxiety, and helped protect against other maladaptive behavior (e.g. substance use).

The results substantiated the beneficial impact that service dogs provide for veterans' overall health and positive reintegration into society; a call to action for change in public policy in the United States of America is needed regarding service dogs as a reimbursable medical expense for invisible wounds.

# Subclinical Autism Traits and Psychological Well-being in Adults: Do relationships with companion animals moderate or mediate the relationship?

**PAULEEN BENNETT**, Georgia Petrou

[pauleen.bennett@latrobe.edu.au](mailto:pauleen.bennett@latrobe.edu.au)

*La Trobe University, Victoria, Australia*

Research in children diagnosed with an Autism Spectrum Disorder (ASD) has shown that companion animals may ease some of the negative psychological effects associated with ASD. While negative psychological effects are known to persist into adulthood, no previous studies have examined whether adults with ASD or individuals with subclinical autism traits (SAT) could similarly benefit from interactions with companion animals.

The aim in this project was to use a non-clinical, adult sample to examine potential mediators and moderators of previously demonstrated relationships between SAT and Psychological Distress, and between SAT and Sleeping Difficulties, with a particular focus on human-companion animal relationship measures.

A sample of 323 adults (27 males, 296 females) completed online a set of self-reported measures of the broad autism phenotype, psychological distress, sleep quality, pet attachment and quality of the pet-owner relationship. Correlational analyses confirmed hypothesised associations between SAT and Psychological Distress, as well as SAT and Sleep Difficulties. Formal mediation analyses demonstrated that loneliness partially mediated the relationship between SAT and Psychological Distress, with the mediating effects being conditional on owner-animal interactions but not on avoidance attachment with pets. Psychological Distress fully mediated the relationship between SAT and Sleep Difficulties, with the mediating effects being conditional on sleep quality with pets.

The results indicate that interactions with pets may have consequences for adults with subclinical autism traits, although these were not always in the expected direction.

# Session 6A

# Social behaviors and positive emotional displays increase in typically developing children in the presence of animals compared to toys

**NOÉMIE GUÉRIN**, Amy Barton, Marguerite O'Haire

[nguerin@purdue.edu](mailto:nguerin@purdue.edu)

*Purdue University, West Lafayette, IN, USA*

Initial evidence suggests that animals may promote social interactions and improve mood in children. The purpose of this study was to examine the interactions of typically developing children and children with autism in the presence of animals (two guinea pigs) compared to toys. The results for the children with autism showed increased social approach behaviors and positive affect (O'Haire, McKenzie, Beck, & Slaughter, 2013).

Here, we present the results of this study for typically developing children.

Ninety-nine children aged 5.2 to 12.7 years ( $M = 9.2$ ;  $SD = 2.3$ ) participated in groups of three (one child with autism and two typically developing peers). For each child with autism, two typically-developing peers were randomly selected from the same classroom (15 classrooms total). Each group of children was video-recorded during three 10-minute sessions with toys and three 10-minute sessions with animals. Animal participants included 30 guinea pigs (two per classroom). A primary blinded observer coded 100% of 1,197 minutes of child behavior, and a secondary blinded observer coded 20% of the videos for reliability. Data were analyzed using hierarchical generalized linear modeling.

Overall inter-rater reliability was excellent ( $\kappa = .81$ ). Results showed that participants demonstrated more social behaviors ( $b = 0.187$ ,  $SE = 0.025$ ,  $t(1168) = 7.34$ ,  $p < .001$ ), including more prosocial behaviors ( $b = 3.41$ ,  $SE = 0.14$ ,  $t(1168) = 25.29$ ,  $p < .001$ ) and less social withdrawal behaviors ( $b = -1.421$ ,  $SE = 0.079$ ,  $t(1168) = -18.094$ ,  $p < .001$ ) in the presence of animals compared to toys. Participants also displayed more positive emotions ( $b = 0.151$ ,  $SE = 0.038$ ,  $t(1168) = 3.971$ ,  $p < .001$ ), including smiling ( $b = 0.200$ ,  $SE = 0.040$ ,  $t(1168) = 5.058$ ,  $p < .001$ ), and laughing ( $b = -0.183$ ,  $SE = 0.085$ ,  $t(1168) = -2.14$ ,  $p < .05$ ) in the presence of animals compared to toys.

The presence of animals appears to increase positive social behaviors and positive emotional displays among typically developing children. Thus the provision of animal-assisted activities may be a suitable enrichment strategy to enhance the social development of typically-developing children alongside their peers with autism in the inclusion classroom.

# A school-based intervention to enhance children's understanding of animals' welfare needs

**JO WILLIAMS<sup>1</sup>**, Janine Muldoon<sup>2</sup>, Alistair Lawrence<sup>3</sup>

[jo.williams@ed.ac.uk](mailto:jo.williams@ed.ac.uk)

1. University of Edinburgh, Edinburgh, UK
2. University of St Andrews, St Andrews, UK
3. Scotland's Rural College, Edinburgh, UK

## INTRODUCTION

Contextualised within the UK policy of promoting a duty of care to animals this study involved the development and evaluation of an age-appropriate school-based intervention for children. The intervention involved three linked interactive classes. The first class was designed to familiarise children with the five freedoms as they relate to pet, farm and wild animals. The second class encouraged children to observe films of animals in different welfare states and use their observational skills to consider whether the freedoms were being met. The final class involved children in considering who is responsible for animal care and supported them in reflecting on their own roles and responsibilities. All workshops involved group work and collaborative learning processes. The intervention was evaluated in terms of improvements in primary school children's understanding of animals' welfare needs, empathy, attachment to pets and attitudes towards animals.

## METHODS

A sample of 410, 9-10 year-olds in 16 school classes participated. Children were from mixed socioeconomic backgrounds in a UK urban setting. Half of the classes participated in the intervention and the other half formed a control group. Children completed pre-test, post-test and delayed post-test questionnaires comprising a range of standardised and bespoke measures to capture key human-animal interaction variables.

## RESULTS

Two-way ANOVA and post hoc tests of difference analyses revealed that the intervention group demonstrated significantly greater knowledge gains than the control for each type of animal ( $p < .001$ ). However, there were few intervention effects on attitudes, empathy or attachments to pets.

## CONCLUSIONS AND IMPLICATIONS

The intervention substantially improved children's understanding of animals' welfare needs and these changes remained at delayed post-test. Establishing a firm understanding of the five freedoms in childhood is an important step towards compassionate behaviour. The intervention has little impact on attitudes, which were almost at ceiling level at pre-test. This intervention failed to promote empathy and attachment to pets, which may require longer-term intervention and direct contact with animals.

# Factors involved in prosocial behaviour towards dogs: an exploratory study in 15 year-old children

JAUME FATJÓ<sup>1,3</sup>, Paula Calvo<sup>1,3</sup>, Antoni Bulbena<sup>1,3</sup>, Jonathan Bowen<sup>1,2</sup>

[jaume.fatjo@uab.cat](mailto:jaume.fatjo@uab.cat)

1. Chair Affinity Foundation Animals and Health, Department of Psychiatry and Forensic Medicine, Autonomous University of Barcelona, Barcelona, Catalonia, Spain
2. Royal Veterinary College, North Mymms, Hertfordshire, UK
3. IMIM (Hospital del Mar Medical Research Institute), Barcelona, Catalonia, Spain

## INTRODUCTION

Cultural, contextual and individual factors can influence the expression of pro-social behaviour, and the extent to which people identify an individual as part of their group affects their willingness to act pro-socially. A study was designed to explore the effect of attitudes and emotions, and past and current experience with animals, on the pro-social disposition of children towards dogs.

## METHOD

Forty-nine 15 year-old children in secondary education (21 boys/28 girls) completed a paper-based survey. Each participant was presented with different scenarios in which either a dog or a child were in the need of help. There were 3 potential helpers: the participant, another boy/girl or a dog. Thus, each participant dealt with 6 different scenarios presented in a randomized order. In addition, participants provided information on sex, past/current experience of living with dogs and how they perceived dogs in terms of self-awareness, cognitive and emotional capabilities.

## RESULTS

Thirty-four percent of participants lived with a companion animal at the time of the study and 16% lived with a dog. Forty-six percent had previously lived with a companion animal and 20% had never had a pet. Two-step cluster analysis produced two clusters: children declaring a high or low disposition to help another child (71.4% & 28.6% respectively). There was a moderate-positive correlation between the tendency to help a child and to help a dog, when the respondent acted as the helper. That correlation was also moderate but slightly higher when the helper was another child and strongest when the helper was a dog. Within the high-intervention group, multiple comparisons (Kruskal-Wallis) between the different scenarios revealed a significant difference in how willing the respondent was to save another child versus a dog ( $p=0.0002$ ). Chi-square tests showed that currently living with a dog was the only factor influencing the predisposition to save the dog.

## CONCLUSIONS

Our results suggest that direct contact with dogs might help children to perceive them as members of their own group and to show prosocial behaviour towards them.

# Reapproaching the Pet-Effect

**JANNES ESHUIS**, Mayke Janssens

[esh@ou.nl](mailto:esh@ou.nl)

*Open University of the Netherlands, Heerlen, The Netherlands*

Based on the effectiveness of dogs in AAT (Nimer & Lundahl, 2015), the growing intuition of practitioners about the ability of dogs to connect with us (Eshuis, Enders-Slegers, & Verheggen, 2016), our evolutionary history with dogs (Grimm, 2015; Hare et al., 2005) and their ability to latch onto our basic attachment mechanisms (MacLean & Hare, 2015; Nagasawa et al., 2015), it is reasonable to assume that dogs have an effect on our wellbeing in everyday life: the so called 'pet effect'.

Literature on this pet effect, however, shows mixed results, ranging from positive to negative, to no effects at all (McConnell, Brown, Shoda, Stayton, & Martin, 2011; Peacock, Chur-Hansen, & Winefield, 2012; Smith, 2012). Our own initial research showed the same. In two independent samples we found a marginal negative effect and no effect at all. Our suggestion is that we are looking at the problem the wrong way: the pet effect should not be approached as a phenomenon that separates dog owners from the general population; rather as a phenomenon within the specific group of dog owners.

Looking at it that way, a survey among dog owners (N = 1442), looking into the specific contexts in which a pet effect could be expected, shows more encouraging results. Most notable results from multiple regression analysis are a positive effect of reported loneliness ( $B = .21$ ,  $p < .001$ ), and negative effects of both the size of the social network ( $B = -.18$ ,  $p < .001$ ), and of the nuclear family ( $B = -.31$ ,  $p < .001$ ), on the social support people experience from their dogs. This implies that the pet effect indeed should not be sought in comparisons between groups, but within the group of pet owners; and that social isolation is one of the main contexts in which it should be further investigated. More specific results and their consequences for further research will be presented.





# The relationship between human-animal empathy and perception of pain among working horses owners

**DANIELA LUNA<sup>1</sup>, Rodrigo Lanas<sup>2</sup>, Rodrigo Vásquez<sup>3</sup>, Tamara Tadich<sup>2</sup>**

[dlunavet@gmail.com](mailto:dlunavet@gmail.com)

1. *Programa Doctorado en Ciencias Silvoagropecuarias y Veterinarias, Universidad de Chile. Becario Conicyt., Santiago, Región Metropolitana, Chile*
2. *Departamento de Fomento de la Producción Animal, Facultad de Ciencias Veterinarias y Pecuarias. Universidad de Chile, Santiago, Región Metropolitana, Chile*
3. *Instituto de Ecología y Biodiversidad, Departamento de Ciencias Ecológicas. Facultad de Ciencias. Universidad de Chile., Santiago, Región Metropolitana, Chile*

Freedom from pain is an important aspect of animal welfare. It has been described that high level of human-animal empathy have positive consequences over welfare of the animals. In recent studies a relationship has been proposed between the empathy expressed by those who care for animals and the recognition of animals` pain. For example, it has been suggest that empathy was the best predictor of how people rated pain in dogs, but no empirical data has been presented to link human-animal empathy with perception of pain in working horses owners. Therefore, the aim of this work was to determine the relationship between animal-directed empathy and perception of pain in equines among urban draught horses owners.

A human-animal empathy scoring instrument, adapted from Paul (2000) and an equine pain recognition tool were applied to 100 working equine owners, mostly men from under 30 to over 60 years of age. High scores in the human-animal empathy scale indicate greater level of animal-related empathy.

The equine pain recognition tool was designed based on previously published studies, the questionnaire consisted of 17 color photographs that showed equines undergoing different conditions assumed painful of varying intensity. Owners were asked to rate the level of pain they believed each animal was experiencing through a Facial Expression Scale. The median pain score for each owner was obtained; high scores in this instrument indicate a greater perception of pain. Spearman's correlation analysis was used to investigate the relationship between empathy and pain perception. A p value of  $p < 0.05$  was used.

Results show a high positive correlation ( $r=0.77$ ,  $p < 0.01$ ) between human-animal empathy and owner`s perception of pain toward equines. These results suggest that mechanisms that mediate empathy towards animals are also involved in the perception and evaluation of pain in them, independent of the species. To conclude, this finding is consistent with previous research demonstrating a solid evidence for relationship between a person's attitude towards the assessment of pain in other (people or animals) and their empathy. On the other hand, promotion of empathic abilities in working horse owners could have positive effects on their equines welfare.

# Human-Horse Relationships and Veterinary Care Decision-Making

**MEGAN MUELLER**, Carolyn Sween, Nicholas Frank, Mary Rose Paradis

[megan.mueller@tufts.edu](mailto:megan.mueller@tufts.edu)

*Cummings School of Veterinary Medicine at Tufts University, North Grafton, USA*

Compared to other household pets, horses are unique as companion animals, given their longevity, the often long-term relationships owners have with horses, and their high cost of care, particularly as they age. Understanding how horse owners make decisions about veterinary care is a key component in understanding the dynamics of human-horse relationships. The purpose of this study was to explore how individuals' relationships with their horses relate to decision-making about veterinary care, including end of life decisions.

Data were collected from a convenience sample of 2,879 horse owners about attachment to their horses, recent veterinary procedures, factors affecting veterinary decisions, and euthanasia experiences. Participants were almost entirely female (98.7%) and were between 18 and 79 years old.

Owners were asked to rank nine factors (cost, attachment, short-term prognosis, long-term prognosis, quality of life, feeling responsible for horse's well-being, veterinarian's opinion, family/friends' opinion, and horse age) regarding their relative importance in making decisions about veterinary care. Quality of life had the highest average ranking (37.2% of participants ranked as #1 priority).

A subsample of 446 participants reported that they had a horse who had died in the last year, and the majority of those had euthanized the horse. Owners who had to make a decision about euthanizing their horses experienced significantly higher bereavement than those who did not.

The results of this study provide interesting initial descriptive information about how human-horse relationships and owner attitudes about veterinary care and end of life decisions may be important factors in understanding human-horse interaction.

# Horses in Islamic Tradition and Muslim Cultures. From Islamic source texts to Muslim attitudes towards horse today

**BARBARA GHIRINGHELLI**

[barbara.ghiringhelli@iulm.it](mailto:barbara.ghiringhelli@iulm.it)

*IULM University, Milan, Italy*

Communities of faith are among the institutions that are most responsive to the complex connections between humans and other animals (Waldau, Patton, 2010).

This paper sets out to explore the status of horses in Islamic Tradition and Muslim Cultures. Qur'an and the Ḥadīth contain a wealth of material and offer remarkable perspectives on different dimensions of the animal question. In the Islamic source, texts horses have a particular place. In the history of Islam, we find that horses have played an important role all round (Tlili, 2012). The focus of research today is the dominant views of Muslims concerning horses and the different attitude and practices of Muslim riders toward horses. This scholarly work emerges into a context where humans' attitudes toward animals are more multifaceted than ever. This is nowhere more true than within the world's Muslim community today, where much effort is expended toward addressing an overwhelming diversity of cultural norms by appealing to those particular normative sources – usually texts – which can be argued to be universally “Islamic”.

From references to horses within the Qur'an and the Ḥadīth, to modern-day websites for Muslim equestrians - Muslim horse owners and Muslim horse riders - this research is a study: on horses in Islamic tradition and Muslim cultures; on Muslim attitudes towards horse racing; on how cultural diversity and cultural change may have affected Muslim attitudes towards horses; and the key ethical questions facing Muslims today.

Results confirm that values and views about animals that originated in religious traditions, often now enshrined in societies as cultural backdrop (Foltz, 2006), continue to exert great influence on this fundamental intersection in our lives but also that attitudes toward horses among Muslims of diverse cultural backgrounds show both similarities and differences. Results show that often Muslims and Non-Muslims claim that a particular view or practice is Islamic even if it derives not from the religious tradition but rather from a particular local culture. A better understanding of similarities and differences will be essential for understanding human-horse interactions in Islamic world and attitude and practices of Muslim riders toward horses.

# Effects of Horsemanship Training on Psychophysiological Health and Perceptions of Quality of Life among Military Veterans with Post Traumatic Stress Disorder

**JESSICA A. JIMÉNEZ**, Ellen Kaye Gehrke, Michael Myers, Peggy Ranke

[jjimenez@nu.edu](mailto:jjimenez@nu.edu)

National University, La Jolla, California, USA

Prolonged psychological stress may generate imbalances in autonomic nervous system functioning in humans (Lambertz, et al, 2009). Heart Rate Variability (HRV) is an objective indicator of physiological stress response. The purpose of this pilot study was to assess the effects of an 8 week horsemanship program on HRV and quality of life indicators among participants with Post Traumatic Stress Disorder (PTSD).

A convenience sample of 7 US military veterans (5 men and 2 women), with a known diagnosis of PTSD, were recruited from a residential treatment facility in San Diego, CA, USA. Over the 8 weeks, participants engaged in 3 hours of activity with 7 horses including grooming, ground work and associated riding activities. HRV was measured at 3 time points using an iPod Touch App: Baseline (start of session), During (Subject interaction with horse), and Post (after participant interaction with horse). Low Frequency/High Frequency ratio (LF/HF Ratio) were calculated using HRV data. The ratio measures the involvement of the parasympathetic nervous system where lower ratios indicate increased para-sympathetic activity. A self-assessment of quality of life was administered pre-and post-sessions.

LF/HF ratios significantly decreased from  $M=1.95$  pre session to  $M=1.5$  during the session and further dropped to  $M=1.30$  post-session ( $p \leq .01$ ). Overall the weekly baseline LF/HF ratios displayed a decreasing trend, with marked mean differences between the Week 1 baseline ratios ( $M=2.47$ ) and Week 8 baseline ratios ( $M= 1.55$ ). Quality of life scores also significantly improved from Week 1 to Week 8 ( $p \leq .01$ ), including notable increases in self-esteem and a reduction in irritability.

These preliminary findings suggest that interaction with horses may improve stress responses and perceptions of quality of life among veterans living with PTSD. Moreover, these data suggest that the human health benefits of human-horse interaction may be sustained over time, as evidenced by the weekly decrease in LF/HF baseline ratios.

Schubert, C., Lambertz, M., Nelesen, R. A., Bardwell, W., Choi, J.-B., & Dimsdale, J. E. (2009). Effects of stress on heart rate complexity—A comparison between short-term and chronic stress. *Biological Psychology*, 80(3), 325–332.

# Session 7A

# Matching needs and sharing happiness: understanding why owners walk their dogs

**CARRI WESTGARTH<sup>1</sup>**, Garry Marvin<sup>2</sup>, Liz Perkins<sup>1</sup>

[carri.westgarth@liverpool.ac.uk](mailto:carri.westgarth@liverpool.ac.uk)

1. University of Liverpool, Liverpool, UK
2. University of Roehampton, London, UK

Dog owners are on average more physically active than non-owners, but some do not, or only rarely, walk with their dog. Quantitative research indicates that the strength of the dog-owner relationship is correlated with dog walking, however, the mechanisms behind this are not understood.

This qualitative study used 12 in-depth interviews of dog-owning households, 14 short interviews of dog owners walking their dogs or representing their breed at a dog show, and autoethnography of the first author's dog walking experiences. Participants included regular and rare dog walkers, and families including children. Data were analysed concurrently with new data collection and emerging themes explored.

Dog walking was primarily constructed as 'for the dog' rather than the person, however, dog owners represented their dog's needs in a way which aligned with their own. Central to this construction of need was the individual dog's personality and behaviour in motivating, pestering and responding to routine cues with excitement. Size or breed also affected perception of exercise need. Different types of dog walking were identified in this study and walking was seen as only one way to exercise a dog. While dog walking was constructed as meeting a dog's needs and was therefore a component of 'responsibility' within dog ownership, owners reported deriving positive outcomes from dog walking. Most notably, owners experienced feelings of 'happiness' when they walked their dogs, but these were 'contingent' on the perception that dogs themselves experienced happiness as a result of being out on a walk, often connected to the 'freedom' enjoyed by off leash exercise. Dog walking also provided connectedness with the natural environment, and other people, but these were not primary motivators. Likewise, owner exercise was noted as a secondary outcome. Both health issues and age, of the owner and dog, were seen as legitimate barriers to walking.

This study demonstrates that the perceptions and beliefs of owners about dog walking are complex, depending on how the needs of the owner and dog are constructed at that time. Behaviour change is unlikely without addressing needs and perceptions on an individual basis.

# Association between dog ownership, physical activity, and health-related quality of life in veterinary students: a cross-sectional study

**VIRGINIA K. CORRIGAN<sup>1</sup>**, Bess J. Pierce<sup>2</sup>, Kathy Hosig<sup>3</sup>

[VAVet10@vt.edu](mailto:VAVet10@vt.edu)

1. Department of Small Animal Clinical Sciences, Virginia-Maryland College of Veterinary Medicine, Blacksburg VA, USA

2. Lincoln Memorial University College of Veterinary Medicine, Harrogate TN, USA

3. Department of Population Health Sciences, Virginia-Maryland College of Veterinary Medicine, Blacksburg VA, USA

The primary objective of this cross-sectional study was to examine the relationship between dog ownership and physical activity in veterinary students. The secondary objective was to gain an understanding of veterinary students' health-related quality of life (HRQOL), and whether dog ownership and/or physical activity were associated with HRQOL measures. Veterinary students were invited to complete surveys between September and November of 2015.

The primary outcome for multivariate analyses was self-reported physical activity. Bivariate analyses and descriptive statistics were performed to assess student HRQOL. The survey response rate was 33% (152/460). Self-efficacy to exercise ( $p < 0.0001$ , OR 4.11, CI 2.1- 8.1) and dog ownership ( $p = 0.01$ , OR 3.77, CI 1.38- 10.32) independently predicted meeting physical activity guidelines when controlling for other variables. Of students that owned dogs, younger dog age, fewer numbers of dogs owned, and increased student age predicted longer total dog walking time per week. About two-thirds of respondents met physical activity guidelines. Veterinary students had significantly worse self-reported mental health scores when compared to both national and state averages.

Neither dog ownership nor meeting physical activity guidelines was correlated with measures of HRQOL. The data support physical activity intervention strategies in veterinary student populations that focus on dog walking and improving exercise self-efficacy. The poor mental health status of veterinary students remains a significant issue for the profession to address. Longitudinal studies are needed that examine the relationship between physical and mental health outcomes in this population.



# Does the Presence of a Dog Reduce Weight Bias?

**MOLLY CROSSMAN**, Alan Kazdin, Katharine Galbraith

[molly.crossman@yale.edu](mailto:molly.crossman@yale.edu)

Yale University, New Haven, CT, USA

## INTRODUCTION

Individuals who are overweight are subject to pervasive bias across domains, and this bias presents a public health problem beyond the effect of excess weight on health. Evidence that the presence of an animal makes individuals and settings appear more attractive, desirable, approachable, and relaxed, suggests that interactions with animals may represent an efficient method for reducing weight bias. We tested whether the presence of a dog reduces endorsement of weight-related stereotypes, enhances overall evaluations, and increases self-reported willingness to interact with individuals who are overweight.

## METHODOLOGY

Participants were 314 individuals recruited through Amazon's Mechanical Turk (MTurk) ([www.mturk.com/mturk/welcome](http://www.mturk.com/mturk/welcome)). Each participant was presented with a stimulus image representing one of the three study conditions (person with dog, person with plant, person alone), and was then asked to rate the human model using three measures. Two sets of stimuli (featuring different models) were used to ensure that findings were not restricted to a particular model.

## MAIN RESULTS

Contrary to our hypothesis, there was no significant effect of condition (dog, plant, or person alone) for the Fat Phobia Scale ( $F(2, 308) = .45, p > .05$ ), the Semantic Differential ( $F(2, 309) = .47, p > .05$ ), or the Social Distance Scale ( $F(2, 308) = 1.86, p > .05$ ).

## CONCLUSIONS & IMPLICATIONS

We found no evidence that the presence of a dog influences perceptions of individuals who are overweight. These findings are in contrast with a large body of literature showing that dogs enhance perceptions of a range of individuals and settings. The effect of dogs on perceptions of individuals who are overweight may be restricted because of the pervasive, explicit, and severe nature of weight bias. Dogs may have stronger effects on attitudes that are less openly endorsed. Promising avenues where dogs are very likely to influence attitudes include perceptions of individuals of different racial and ethnic backgrounds, gender identities, and even political parties.

# Companion Animals, Social Engagement, and Psychological Well-being in Older Adults in the United States

JESSICA BIBBO<sup>1</sup>, Rebecca Johnson<sup>1</sup>, Angela Curl<sup>2</sup>

[jlbnq7@mail.missouri.edu](mailto:jlbnq7@mail.missouri.edu)

1. University of Missouri, Columbia, MO, USA

2. Miami University, Oxford, OH, USA

As numbers of individuals over age 55 increase, we must understand how to facilitate their social engagement as a promoter of well-being and health. We examined the relationship between companion animal (CA) ownership and bonding with social engagement and psychological well-being, and the relationship between social engagement and psychological well-being. We employed data from the 2012 Health and Retirement Study (HRS) including the Human-Animal Interaction (HAI) module. The HRS is a nationally representative dataset of non-institutionalized people in the United States. Our sample included only respondents age 55 and over randomly assigned to respond to the HAI module (N=1,658). Fifty-four percent (n=901) of the sample lived with CA. Data were analyzed using Ordinary Least Squares regression and binary logistic regression to explain variability in our dependent variables, and was weighted to account for the complex survey design of the HRS. Our conceptual framework synthesized three notions regarding CAs, social engagement, and psychological well-being. First, CAs foster individual social capital by loving their owners, promoting motivation for socially beneficial activities (e.g., walking and visiting community sites such as parks). Second, CAs promote social interaction. Third, social engagement and psychological well-being are related.

Results indicated that neither living with a CA nor degree of bonding significantly predicted social engagement or psychological well-being. However, social engagement was associated with psychological well-being. For CA owners, more frequent social contact with neighbors and attending social meetings at least monthly were associated with fewer depressive symptoms ( $\beta = -.10$ ,  $p < .01$  and  $\beta = -.16$ ,  $p < .01$ , respectively) and better life satisfaction (social meeting attendance;  $\beta = .11$ ,  $p < .05$ ). In people without CA, formal volunteering and attending social meetings at least monthly were associated with fewer depressive symptoms ( $\beta = -.13$ ,  $p < .01$  and  $\beta = -.10$ ,  $p < .05$ , respectively) and better life satisfaction ( $\beta = .13$ ,  $p < .01$  and  $\beta = .17$ ,  $p < .01$ , respectively), but frequency of social contact with neighbors was not significant for non-CA owners.

Findings suggest that the role of CA in promoting contact with neighbors may be important to investigate. Volunteering may substitute for psychological gains of CA ownership in those without CA.

This study was funded by grant D15HA-014 from the Human Animal Bond Research Initiative Foundation.



# The importance of dog-handler interactions and handler characteristics in influencing scent detection dog success

**SARAH BEEBE<sup>1</sup>**, Tiffani Howell<sup>1</sup>, Pauleen Bennett<sup>1</sup>, Tammie King<sup>2</sup>

[18722627@students.latrobe.edu.au](mailto:18722627@students.latrobe.edu.au)

1. La Trobe University, Bendigo, VIC, Australia

2. Waltham Centre for Pet Nutrition, Leicestershire, England, UK

Scent detection dogs have been used as a tool for conservation research for over 100 years, detecting endangered and invasive species of plants and wildlife, scats, dens, and even animal carcasses. However, it is only in recent years that scientists have begun to document how these dogs are used and evaluate their effectiveness.

Our study consisted of two parts. The first comprised a review of conservation scent detection dog literature published over the past 45 years. The review focused on the capabilities, limitations, and applications of scent detection dogs as tools for conservation work, investigating how they have been used and why they are so successful in some situations, yet fail in others.

We applied a biopsychosocial framework to the literature to determine which biological, psychological, and social characteristics were considered to be most predictive of success. The biological and psychological traits selected for in scent detection dogs have been widely documented. However, little is known about how the relationship between dog and handler may influence the success of scent detection dogs, or whether specific handler characteristics may make for more successful working dog teams. Thus, for the second part of the study, we analysed interview data collected from 40 professional scent detection dog handlers and trainers. Only a subset of these participants worked in the area of conservation. Our qualitative analysis investigated the extent to which handler characteristics, such as motivation, persistence, and attitudes towards dogs, were thought to be associated with success in canine scent detection work.

We found a great deal of variability in the perceived importance of the dog-handler relationship between different fields of scent detection work. Understanding which characteristics may predict the success of scent detection dog handlers, and whether the relationship between dog and handler is of variable importance between different fields of scent detection, is an important area for further research. This knowledge is necessary to improve selection, training, and deployment methods for scent detection dogs.

# Factors affecting guide dog partnership success

**CHANTELLE WHELAN<sup>1</sup>**, Lucy Asher<sup>2</sup>, Kathryn Almack<sup>1</sup>, Gary England<sup>1</sup>, Sarah Freeman<sup>1</sup>

[stxcw8@nottingham.ac.uk](mailto:stxcw8@nottingham.ac.uk)

1. University of Nottingham, Nottingham, UK

2. University of Newcastle, Newcastle, UK

The UK charity Guide Dogs is the largest trainer of working dogs in the world (Guide Dogs, 2016). Whilst many studies have investigated traits indicative of guide dog qualification (e.g. Asher et al. (2013) & Duffy and Serpell (2012)) there has been little research into predictors of partnership success post qualification.

This study was designed to address this gap and to identify factors that may predict guide dog partnership success. Hypotheses based on premature retirement research (Whelan, unpublished) were formulated. These were tested on retrospective data of guide dog partnerships that qualified between January 2009 and September 2014. This resulted in a sample of 4,657 partnerships made up of a guide dog and its owner. Partnerships consisted of 2,396 female and 2,259 male owners, two owners' genders were unknown. There were 2,207 female and 2,450 male dogs. Logistic regression analyses were used to test the effect of a range of variables on partnership success. Guide dog owners who had previous experience of premature retirement were more likely to have an unsuccessful partnership. As were owners that had a high amount of guide dog experience. Owners that held their head or moved their eyes in a particular way to maximise their vision paired with dogs that displayed high levels of distraction during puppy walking were also more likely to have an unsuccessful partnership.

These findings can help identify guide dog owners and partnerships that may be at risk of having a short working life. Predictors of success concerned owner characteristics and the pairing between the dog and owner, suggesting current guide dog qualification standards work well. The results can be used to ensure owners at risk of unsuccessful partnerships are closely monitored and improve future matching of guide dog partnerships. In addition the relationship between the owner's head and eye orientation and the dog's distraction levels supports existing literature on the social-cognitive abilities of dogs in reading human attentional states (Call et al., 2003).

# Training pet dogs for scent work as diabetes alert dogs

**TIFFANI J. HOWELL**, Diana Rayment and Pauleen Bennett

[t.howell@latrobe.edu.au](mailto:t.howell@latrobe.edu.au)

*School of Psychology and Public Health, La Trobe University, Bendigo, VIC, Australia*

Diabetes alert dogs (DADs) inform their diabetic owner of when s/he has experienced a change in blood glucose levels, which they likely detect through changes in the owner's breath. Research suggests that DADs reduce paramedic callouts and improve owners' subjective well-being. Due to the expense of training DADs, this resource is unavailable for many diabetic patients.

The aim of our study was to determine whether pet dogs can be trained to reliably alert to the presence of a target scent (myrrh) on their owner. Pet dogs (N = 13) and their owners in three Australian states participated in a 10-week training program with a hobby scent trainer. Training involved classical conditioning using food to build a positive association of the scent, and free-shaping to teach the dogs to indicate the presence of the scent. Then dog-owner teams participated in a 4-week testing session. When in the presence of their dog, owners wore either a waterproof container containing myrrh (scent-present), or an identical waterproof container that did not contain myrrh (scent-absent). Occasionally, the owner would open the container. We measured when the dog alerted to the presence of the scent after the scent-present container was opened, and when the dog did not alert when the scent-present container was opened.

We compared these results to the same information when the owner was wearing the scent-absent container, indicating a true negative if the dog did not alert when the container was opened, and a false positive if it did alert. Dogs provided significantly more true positives and true negatives than false positives or false negatives, supporting a 10-week training requirement for pet dogs to reliably alert to a target scent. This may ultimately permit diabetic owners to train their pet dog to alert to a change in their blood glucose levels.

# The pet-effect in real life: the influence of companion animals on affect and self-esteem in daily life

**MAYKE JANSSENS**, Jannes Eshuis, Michel Deiman, Nele Jacobs

[mayke.janssens@ou.nl](mailto:mayke.janssens@ou.nl)

*Department of Psychology and Educational sciences, Open University of the Netherlands, Heerlen, The Netherlands*

Since the early 80's many articles have been published describing the positive impact of companion animals on human health, termed the pet-effect. More recent research however raised doubt about the unequivocalness of these findings. Several studies failed to report an association between pet ownership and health or even reported a negative association. A possible explanation for these inconsistencies is that the pet-effect might not be a universal effect but is associated to specific contextual factors.

This study examines the pet-effect in daily life and aims at identifying the daily life situations and contexts that give rise to the positive effect of companion animals. Using the Experience Sampling Method (ESM), a validated random signal contingent sampling technique, data is collected with high ecological validity. This entails data on human experiences and behavior in interaction with the daily environment (including companion animals) as they occur under natural circumstances. This allows us to study the nature of the interaction with companion animals and the effects of these interactions on psychosocial functioning (e.g. affect, self-esteem, social interactions) in the flow of daily life. The pilot study (n=21) presents a proof of concept to the utilization of the ESM in human animal interaction studies.

The results show that the presence of companion animals is associated with a decrease in negative affect ( $P < 0.001$ ,  $B = -0.17$ ) and an increase in positive affect ( $P < 0.001$ ,  $B = 0.36$ ) as well as an increase in self-esteem ( $P < 0.01$ ,  $B = 0.16$ ). There was no association between the level of interaction with the companion animal and affect or self-esteem, or between the level of physical contact and affect or self-esteem. This study demonstrates the feasibility of the ESM in the study of human animal interaction. The results are promising and indicative of a "pet-effect". This effect however seems to be brought about by the presence of the companion animal and not by the activity performed with the companion animal or the level of physical contact.

# Poster Presentations



# Recognition by local government officials about problems with pet feces in Japan

**NAOKO KODA**

[koda@cc.tuat.ac.jp](mailto:koda@cc.tuat.ac.jp)

*Tokyo University of Agriculture and Technology, Fuchu, Tokyo, Japan*

Many pets are kept in Japan. At the same time, manners of pet keepers are essential. Feces of dogs and cats are frequently pointed out as pet-related nuisances. Japanese local governments have made various efforts to solve the problems regarding leaving pet feces, but they do not always succeed. This study involved a questionnaire survey of the efforts to solve the problems of leaving pet feces performed by local governments and the perceived effects by officials.

Seven hundred eighty-one local governments in Japan (45% of all local governments) were sent a questionnaire by mail. The response rate was 78% (n=611).

About 80% of local governments reported the problems related to the feces of dogs and cats in the jurisdiction, and about 80% of the officials felt a mental burden. Stray dogs were few, but stray cats were numerous in about 70% of the areas. Many local governments supported public education through newsletters, websites and posters to prevent leaving pet feces, but the officials perceived the effects as unclear.

Most local governments had problems with people leaving feces of dogs and cats. The possibility was low that the feces were left by stray dogs. Not only owned dogs but also stray and free-ranging cats are inferred as causes. Many local governments conducted public education to prevent the leaving of pet feces, but the effects were unclear. Improved practice is necessary, such as effective public education, and promoting community participation. It is more difficult to cope with feces left by cats than those by dogs for local governments, because there are not enough laws for cat control in Japan. In the current situation, emphasis on public education on the proper care and management of cats is necessary, such as keeping cats inside the house. In addition, consideration for officials' stress would be important for continuous efforts.

# Engagement in Science and Engineering through Animal-Assisted Education

**MEGAN MUELLER**, Cynthia Leveille-Webster, Elizabeth Byrnes, Danielle Buczek, Lisa Freeman, Deborah Linder

[megan.mueller@tufts.edu](mailto:megan.mueller@tufts.edu)

Tufts University, Cummings School of Veterinary Medicine, North Grafton, MA, USA

Research increasingly supports the effectiveness of incorporating animals into classroom curricula as a strategy for engaging students. The present study focused on one particularly promising application of animal-assisted education (AAE): AAE in science, technology, engineering, and math (STEM) education. STEM education is a critical component of successful educational initiatives, but a persistent challenge is retaining student interest in STEM fields. Given the direct link between animals and many topics relevant to science and engineering, AAE provides the opportunity to introduce students to STEM principles in an engaging way that promotes an optimal learning environment. The goal of this study was to assess the effectiveness of animal-based curricula in motivating students' interest in science and engineering.

Data were collected from two animal-based STEM programs for middle-school students. One program met weekly for four weeks (N=43), and the second program ran daily for one week (N=34). Both programs included curriculum on careers in science, and an animal-based engineering activity (e.g., designing a mobility assistance device for a disabled dog). Participants were asked to complete a pre- and post-program survey. STEM interest was indexed using the science and engineering subscales (range 1 to 5) of the STEM Career Interest Survey (Kier et al., 2013).

The participants were 83% female, and 79% of the participants had at least one pet at home. Results of paired sample t-tests indicated that students in both programs reported a significant increase in scores on the engineering interest subscale after completing the program (Weekly Program:  $t = -2.72$ ,  $p < .01$ ; Daily Program:  $t = -2.39$ ,  $p = .02$ ), but no significant differences in the science interest subscale (Weekly Program:  $t = -.35$ ,  $p > .05$ ; Daily Program:  $t = -1.43$ ,  $p > .05$ ). Lack of significant findings with regard to the science subscale may be due to a ceiling effect; the majority of participants reported a relatively high interest in science upon entering the program (Weekly Program:  $M = 4.24$ ; Daily Program  $M = 4.35$ ).

The findings from these pilot data provide important exploratory information about the potential effectiveness of AAE as a strategy for increasing interest in STEM careers for middle school students.

# The Effect of Intake Type on the Adoptability of Shelter Cats

**MARIE CARMEN ABNEY**

[abneyma1@msu.edu](mailto:abneyma1@msu.edu)

*Michigan State University, East Lansing, Michigan, USA*

American animal shelters are greatly concerned with their live release rates—the number of animals adopted or transferred out of a shelter’s care alive—because these rates strongly influence shelters’ reputations and access to funding. Related to this is the length of stay, the time between intake and adoption of an animal. The more quickly animals move through the process, the fewer animals are euthanized due to housing and time limitations.

Previous research on cat adoptability focused on cat-specific characteristics, but Dybdall and Strasser (2014) took a different approach, focusing on perceived adoptability of a cat based on its intake type—stray or owner-surrender—and finding an adoption advantage for owner-surrender cats. The current study is fashioned after this 2014 study, using a sample of 218 cats aged 1 year and older and adopted from the Humane Society of Huron Valley (HSHV) in Ann Arbor, Michigan between January and September 2015. The data collected includes sex, age, breed, and color, entry type and number of days available for adoption, behavioral and medical information. Initial findings include significantly longer lengths of stay for older cats, those with chronic health issues, and those with so-called “unadoptable” personalities (STATA version 14.0, OLS regressions, significance  $p < 0.05$ ). Yet there was no significant relationship between intake type and length of stay.

There is a second study in the works for Spring 2016, replicating this initial study with a larger sample of cats from HSHV. Next, I will follow this with research directly studying people’s perceptions of shelter cats. I would like to conduct a survey-based study on adopter perceptions, asking potential adopters to identify their preferred cat characteristics, how interactions with staff influence adoption decisions, and whether stray versus owner-surrender status matters. Finally, I plan on conducting a comparative study, distributing the survey in multiple shelters. After all, research findings lose their power if single isolated shelters are studied but “context matters” and a shelter in need of reformation exists in a different context than previously studied shelters.

# The dimensions of dog petting: comparison of post-stressor activity groups on social stress relief

**KRISTIN FINKBEINER<sup>1</sup>**, Kirstin Woodruff<sup>2</sup>, William Helton<sup>1</sup>

[kristin.finkbeiner@pg.canterbury.ac.nz](mailto:kristin.finkbeiner@pg.canterbury.ac.nz)

1. University of Canterbury, Christchurch, New Zealand

2. Wilmington College of Ohio, Wilmington, OH, USA

Animal therapy is a rapidly growing contemporary medicine, where dogs are often employed for their high probability of positive interactions with humans (Barker & Dawson, 1998; Odendaal & Meintjes; Solomon, 2010; Wohlfarth et al., 2013). Many studies suggest that interacting positively with a dog provides a plethora of therapeutic benefits, such as increased sociality, stress and heart rate reduction, including increased overall reports of well-being (Banks & Banks, 2002; Barker & Dawson, 1998; Odendaal & Meintjes, 2003; Solomon, 2010; Wohlfarth et al., 2013). It is believed that interacting with a dog may provide more instantaneous benefits towards stress reduction in comparison to other occupational therapies (e.g. reading, meditation), specifically lowered heart rate and lowest stress self-reports.

52 participants from Ohio (M=8, F=44), ages ranging from 14-31 years old (M=18.62, SD=2.61) were divided equally between the three experimental conditions (dog petting, reading and meditation). Participants experienced a social stressor (reading aloud an embarrassing memory and attempting verbal mathematical problems), which was followed up by an activity intervention. For the dog activity intervention, two labrador retrievers (male, ages 8 and 12) were used.

Results show that all groups experience a reduction in heart rate during the activity group,  $F(4, 88) = 2.69$ ,  $p = .036$ ,  $\eta^2_p = .109$ , whereas the dog petting group experienced the highest increase in stress-reduction measurements,  $M = 4.25$ ,  $SE = .147$ , 95% CIs [3.95, 4.54], compared to the other groups. This provides support for the psychophysio benefits of animal therapies, specifically canine. Future studies should focus on reduction of extraneous variables and look at species-based and breed-based stress report differences when implementing animal therapies.

Key Words: stress relief; STAI; heart rate; social stressor; dog therapy

# Psychological Risk Factors for Childhood Animal Cruelty: A Systematic Review

**EMMA HAWKINS**, Roxanne Hawkins, Joanne Williams

[s1477956@sms.ed.ac.uk](mailto:s1477956@sms.ed.ac.uk)

*School of Clinical and Health Psychology, University of Edinburgh, UK*

Despite growing research into human-animal relationships, relatively little research has focused on negative relationships between children and animals. The purpose of this review was to investigate the potential psychological risk factors for childhood cruelty to animals. The aim was to assemble, synthesise and evaluate the quality and breadth of existing empirical research and highlight areas in need of further study on this topic.

To identify valid literature, the PRISMA guidelines were consulted and a Boolean search was conducted. Eighteen databases were searched, pre-defined inclusion and exclusion criteria were applied and the quality of the final 39 articles was assessed using a quality assessment tool.

The review reveals a myriad of potential psychological risk factors associated with childhood animal cruelty, these factors are complex, multifaceted and may be interrelated. Risk factors included but was not limited to: adverse childhood histories such as abuse and neglect, witnessing abuse, mental health, sadism, callous and unemotional traits, lack of empathy, and behavioural problems such as conduct disorder, fire setting, aggression, destructiveness and bullying. The review also highlights possible social and environmental factors that may have an impact on child-animal relationships. The review highlights a decrease in research interest in recent years, a lack of high quality publications and confirms the need for more stringent methodological procedures to improve the integrity of this field of research and to expand our knowledge and understanding of animal cruelty.

Investigating the predictors of cruel behaviour towards animals has great implications for animal welfare and child wellbeing, as well as being vital for designing and implementing successful universal and targeted interventions to prevent cruelty to animals. The lack of standardised animal cruelty measures as well as sensitivity issues may be impeding the advancement of research in this area. Due to the significant implications, it is important that future research addresses and improves upon the methodological flaws outlined in this review

# Call Me Sheep: How looking at the social interactions of sheep can change human perceptions

**MARIKA S. BELL**

[marika@hollinhall.farm](mailto:marika@hollinhall.farm)

*Masters student at the University of Exeter, UK. Department of Philosophy and Social Sciences*

How humans perceive sheep can inform how these perceptions can be changed for purposes of advocacy. We will discuss how research into animal relationships can be used for practical purposes of interacting and understanding other animals; how perceptions can be altered by research such as that described here, and presented in a way that allows animal relationships to be recognized by humans in terms of 'friendship', i.e., choosing to spend time with specified others when you have the option not to, (Seyfarth & Cheney 2012; Christakis & Fowler 2014).

This recognition of choice regarding friendships with other beings, demonstrate their potential as 'persons' (Latour 2005; Bekoff 2001). This follows that they can form friendships similar to human-human friendships and are demonstrated in ways recognizable to human-people due to 'embodied knowledge' (Hamington 2008) of the feelings associated with friendship. This recognition can be held as further evidence that other animals, in this case sheep, have an innate right to personhood and moral consideration; impacting how human understanding of sheep as persons can change the interspecies dynamic of 'othering', a Kantian ontology that asserts all other animals exist primarily (or completely) for the use of humanity (Kant 1963). Lastly we will discuss how this methodology can be utilized for those who work with other-than-human animals by using egomorphic, (Milton 2005), 'embodied knowledge' (Hamington 2008), to better see and know other animals as individual persons.

# Social identification with animals and with humans: Associations with human prejudices, moral concerns, and glorification of the human identity

CATHERINE AMIOT<sup>1</sup>, Brock Bastian<sup>2</sup>, Katharine Greenaway<sup>3</sup>

[amiot.catherine@uqam.ca](mailto:amiot.catherine@uqam.ca)

1. UQAM, Montreal, Canada
2. University of Melbourne, Melbourne, Australia
3. University of Queensland, Brisbane, Australia

Social psychological principles are relevant to understanding human-animal relations (Amiot & Bastian, 2015; Plous, 2003). Building on theories of intergroup relations (Tajfel & Turner, 1986), the current studies investigate how social identification with animals increases our concerns toward animals and even toward human groups (Bastian et al., 2012). We also test if identifying with humans is associated with a tendency to enhance this ingroup.

Two correlational studies were conducted in the USA using Amazon Mechanical Turk (Study 1: N=172 non-Black participants, aged 18-73; Study 2: N=191; aged 18-69). Study 1 questionnaire assessed participants' level of social identification with animals, racism, sexism, ageism, and hierarchy-enhancing ideological beliefs (right-wing authoritarianism-RWA; social dominance orientation-SDO). Study 2 questionnaire assessed identification with animals and with humans, moral concerns toward animals, and prototypicality and glorification of the human identity.

In Study 1, identification with animals correlated with lower prejudice (e.g., racism:  $r=-.15$ ,  $p=.057$ ; ageism:  $r=-.27$ ,  $p<.001$ ), and lower endorsement of RWA ( $r=-.26$ ,  $p=.001$ ) and SDO ( $r=-.16$ ,  $p=.043$ ). In Study 2, while identification with animals and with humans were positively correlated ( $r=.26$ ,  $p<.001$ ), these two identities predicted distinct outcomes: Identification with animals (but not with humans;  $\beta=.05$ ,  $p=.499$ ) significantly predicted greater moral concern for animals ( $\beta=.31$ ,  $p<.001$ ). In contrast, identification with humans (but not with animals;  $\beta=-.05$ ,  $p=.526$ ;  $\beta=-.11$ ,  $p=.125$ ) significantly predicted greater perception that humans are prototypical of living creatures ( $\beta=.32$ ,  $p<.001$ ) and glorification of humans ( $\beta=.33$ ,  $p<.001$ ).

The findings confirm the relevance of two highly inclusive social identities and their unique associations with animal- and human-related outcomes.

Amiot, C. E., & Bastian, B. (2015). Toward a psychology of human-animal relations. *Psychological Bulletin*, 141(1), 6-47.

Bastian, B., Costello, K., Loughnan, S., & Hodson, G. (2012). When closing the human-animal divide expands moral concern: The importance of framing. *Soc. Psych. and Pers. Science*, 3, 421-429.

Plous, S. (2003). Is there such a thing as prejudice toward animals? In S. Plous (Ed.), *Understanding prejudice and discrimination* (pp. 509-528). New York: McGraw-Hill.

Tajfel, H. & Turner, J. C. (1986). The social identity theory of inter-group behavior. In S. Worchel and L. W. Austin (Eds.), *Psychology of Intergroup Relations*. Chicago: Nelson-Hall.

# Promoting positive child-animal relationships and preventing animal cruelty through education

**ROXANNE HAWKINS, Joanne Williams**

[s1477956@sms.ed.ac.uk](mailto:s1477956@sms.ed.ac.uk)

*School of Clinical and Health Psychology, University of Edinburgh, UK and the Scottish Society for the Prevention of Cruelty to Animals*

There is currently a lack of evidence-based methods that positively influence the factors underlying the child-animal relationship. This study aimed to evaluate the effectiveness of an animal welfare education programme, 'Prevention through Education' developed by the Scottish Society for the Prevention of Cruelty to Animals (Scottish SPCA). The workshops, for children aged 6-13 years, were designed to address children's knowledge about the welfare needs of animals as well as encouraging empathy and positive attitudes towards animals.

Key factors including: knowledge about animals, attachment to pets, attitudes towards animals, beliefs about animal minds (Child-BAM) and attitudes towards animal cruelty, were assessed using a self-complete questionnaire administered to 1,217 primary school aged children (51% boys, 49% girls, and 6-13 years old). A pre-test, post-test and delayed post-test method was employed and a test group was compared to a control group. Children in the test group participated in one of four workshops; each workshop had a specific focus on either pet animals, farm animals, wild animals or general animal rescue and welfare.

Using a three-way mixed model ANOVA, results showed that children who participated in the programme had higher knowledge about animals ( $F(4,1191)=22.4, p=.000$ ) and the Scottish SPCA ( $F(1,1163)=34.74, p=.000$ ), a higher Child-BAM ( $F(4,1144)=4.58, p=.001$ ), had more positive attitudes towards animals ( $F(4,1055)=4.08, p=.003$ ), specifically towards wild ( $F(4,1128)=3.15, p=.014$ ) and farm animals ( $F(4,1122)=4.64, p=.001$ ), and were less accepting of animal cruelty ( $F(4,1164)=2.72, p=.028$ ). The programme had the largest impact on knowledge about animals and knowledge about the Scottish SPCA with older children scoring the highest. The programme did not have a significant effect on children's attachment to pets. Further analysis indicates demographic differences including age, gender, family affluence and area of residence.

This study provides evidence for the effectiveness of the Scottish SPCA's 'Prevention through Education' programme in positively influencing the factors underlying child-animal relationships, particularly knowledge, attitudes, Child-BAM and decreasing acceptance of animal cruelty. Scientific evaluations such as this one, are invaluable tools for demonstrating the effectiveness of such programmes, and for reviewing and enhancing programmes. Through the evaluation of animal welfare education programmes, significant and sustained improvements can be made that will ultimately positively influence the treatment of animals.



# Effect of sex, breed, age and body weight over dogs feeding behaviour

**JAIME FIGUEROA**, Sergio Guzmán-Pino, Carem Muñoz

[jaime.figueroa@u.uchile.cl](mailto:jaime.figueroa@u.uchile.cl)

Universidad de Chile, Santiago, Chile

Preference tests allow studying the feeding behaviour of humans and domestic dogs. However, besides diets characteristics (smell, odour, viscosity, temperature etc.), animals intrinsic variables may affect food preferences. Human races, sex, weight and age could change responses in front of different food components. Nevertheless there is little information about how these variables may affect food choices in dogs. The aim of this study was to analyse the effect of dog's intrinsic variables over their food intake and preferences in front of palatable diets.

Ten years of dogs' food preferences data (2003-2013) obtained from a database of the Research Center of Pet Feeding Behaviour (Facultad de Ciencias Veterinarias y Pecuarias, Universidad de Chile) were used. Preference tests performed during those years consisted on the placement of two simultaneous feeders in the front of dogs cannels during 10 consecutive minutes. Food was weighted at the beginning and end of each test to calculate animals' food intake. To compare different tests we assigned the letter A to the most preferred diet. Data was analysed by dogs' sex (male and female), breed (Beagle or Labrador) age (1-15 years) and body weight at the moment of each test by using the mixed procedure of the statistical software SAS.

The sex, age and weight of dogs presented an effect over animals' intake in front of palatable diets ( $p < 0.040$ ). Dogs sex did not affected food preferences [Beagle;  $F(1, 1801) = 0.79$ ,  $p = 0.371$  and Labrador;  $F(1, 262) = 0.05$ ,  $p = 0.815$ ], while animals weight influenced preferences in Beagle [ $F(1, 1801) = 4.18$ ,  $p = 0.041$ ] and Labrador [ $F(1, 262) = 10.67$ ,  $p = 0.001$ ], showing a positive correlation only in the Beagle breed ( $R = 0.010$ ;  $p = 0.050$ ). Moreover, dogs age affected only food preferences of Beagles [ $F(1, 1801) = 7.95$ ,  $p = 0.005$ ], showing again a positive correlation ( $R = 0.085$ ;  $p = 0.003$ ).

As proposed in humans, dog's weight, age and breed could affect their feeding behaviour probably explained by adaptive changes in animal's detection, metabolization and learning of nutritive food cues found in the environment.

# Investigation of descriptions written by children who participated in the animal caring activity: Comparison with the descriptions in the activity to care for garden

**ASAMI TSUCHIDA**, Mami Fujioka, Nao Yokoyama, Naoki Kimoto

[a3tsuchi@nodai.ac.jp](mailto:a3tsuchi@nodai.ac.jp)

*Tokyo University of Agriculture, Atsugi, Kanagawa, Japan*

It is important for animal welfare that caregivers learn how to care for animals. Caring for and petting animals do not only give us peace of mind but also lead children humane education (Daly&Suggs, 2010). We have given elementary school students an activity caring for animals (ACA) with undergraduate school students as volunteers since 2013 in a university. The activity was done under permission by participants' guardians with informed consents before starting activity. Participants described their impression about the activity after finishing it. This report is the investigation of the descriptions to assess the state of ACA, in comparing with another activity, caring for garden (ACG), which was carried out to manage of the garden with some flower beds, a stream with fishes and some vegetable fields.

One hundred seventy seven participated in ACA (57male and 120female for horses, dogs and rabbits), and 32 (14male and 18female) participated in ACG. We got 132 descriptions in ACA and 26 in ACG, in which 32ACA-participants and 14ACG-participants have several participations. Descriptions were analyzed on words and volume of letters by using TRASTIA/R.2 (Justsystem) and Excel Statistical2012 (SSRI).

The more frequently participants took part in ACA, the fewer letters the participants wrote (Mann-Whitney,  $p < .05$ ), not in ACG. Female ACA-participants wrote more letters than males did (Mann-Whitney,  $p < .05$ ). In contrast, rate of the number of the descriptions to the number of participants in ACG increased at next time rather than that at the first time (Fisher's exact test,  $p < .05$ ). Frequency of "enjoyable" in ACA, which was extracted the most frequently among adjective words, decreased from the first participation to the next participation ( $\chi^2(1)=11.4$ ,  $p < .01$ ).

These results show that participants enjoyed every activity, however, ACA-participants was likely to decrease the impression which they wanted to describe. This is why ACA contains just washing cages or stable, taking a walk with an animal, brushing and feeding. Therefore, ACA needs more device to tell children how important caring for animals is to keep their health condition.

This research was supported by Nakayama-grant B-25-49.

# Animal welfare in working horses: a perspective from perception of pain of their owners

**DANIELA LUNA<sup>1</sup>, Rodrigo Lanas<sup>2</sup>, Rodrigo Vásquez<sup>3</sup>, Tamara Tadich<sup>2</sup>**

[dlunavet@gmail.com](mailto:dlunavet@gmail.com)

1. *Programa Doctorado en Ciencias Silvoagropecuarias y Veterinarias, Universidad de Chile. Becario Conicyt., Santiago, Región Metropolitana, Chile*
2. *Departamento de Fomento de la Producción Animal, Facultad de Ciencias Veterinarias y Pecuarias. Universidad de Chile., Santiago, Región Metropolitana, Chile*
3. *Instituto de Ecología y Biodiversidad, Departamento de Ciencias Ecológicas. Facultad de Ciencias. Universidad de Chile., Santiago, Región Metropolitana, Chile*

The ability to recognize pain plays a key role in assessment and subsequent decision taking for its alleviation in animals. But to our knowledge there is no information on how owner`s perception of pain affects the welfare of working horses. The aim of this study was to determine the relationship between working horse owner`s pain perception and the welfare state of their horses.

The welfare state of 127 urban draught horses was assessed. A welfare assessment scoring system (index) for working horses was calculated. The index includes three dimensions according to the welfare definition provided by Duncan and Fraser (1997). These were physical, behavioural and mental states; each dimension included a group of animal based welfare indicators. The equine welfare index goes from 0 to 1, with higher scores indicating poor welfare. To determine owner`s perception of pain, a questionnaire evaluating pain perception was designed, the questionnaire consisted of 17 color photographs that showed equines undergoing different conditions assumed painful of varying intensity. Owners (n=100) were asked to rate the intensity of pain they believe each animal was experiment through a Facial Expression Scale, The median pain score for each owners was obtained, where high scores indicate a greater perception of pain. To analyse associations, Spearman`s correlation and linear regression models were calculated. A significance level of  $p < 0.05$  was established.

Results show a moderate negative correlation ( $r = -0.6985$ ,  $p < 0.001$ ) between pain perception and the welfare index. The linear regression model also showed an association between the welfare index and owner`s perception of pain. Thus, owners who have greater perception of pain toward equines have horses in better welfare state (model:  $R^2_{adj} = 0.5594$ ,  $p < 0.01$ ,  $\beta = -0.11484$ ).

Overall, these findings suggest that pain perception is an important factor determining the level of well-being of animals, and could affect the way in which equines are treated and cared for. Therefore, the ability of the owner to identify painful conditions in their equines may have a big influence over the life and welfare of their animals, and subsequent well-being of these families that depend on them for their subsistence.

# Protecting Participants in HAI Research

**MOLLY CROSSMAN**

[molly.crossman@yale.edu](mailto:molly.crossman@yale.edu)

*Yale University, New Haven, CT, USA*

## INTRODUCTION

Human-animal interaction (HAI) researchers face a unique challenge: they must protect the rights and safety of both human and animal participants. This challenge is complicated by the fact that Institutional Animal Care and Use Committees (IACUCs) and Institutional Review Boards (IRBs) are not set up to regulate HAI research. This review will outline how the lack of HAI-specific regulations is a barrier to the progress of HAI research and the protection of participants, and suggest steps for improvement.

Key references include the Guide for the Care and Use of Laboratory Animals, which is internationally recognized as a primary reference; and central works on the ethical care of animals in practice (e.g., IAHAIO, 2014, National Research Council, 2011; Ng et al., 2015)

## MAIN FINDINGS

Current guidelines for research involving animals were developed in the early 1960s, before HAI research began and ISAZ was founded. Since then, HAI research has expanded considerably. However, the most recent edition of the Guide for the Care and Use of Laboratory Animals still does not reflect the needs of HAI researchers or the animals with whom they work. The lack of standards that are specific to HAI research is an issue of animal welfare, and a barrier to the productivity of HAI research.

## CONCLUSIONS & IMPLICATIONS

HAI researchers can take a number of steps to make regulatory guidelines more appropriate for HAI research. Proposed steps include: (1) Ensuring that HAI researchers and experts on companion animal welfare are included on the Committee for the Update of the Guide for the Care and Use of Laboratory Animals, (2) Amending the Guide for the Care and Use of Laboratory Animals to address the needs of companion animals in research, (3) Establishing evidence-based procedures for supervising HAI in research settings, (4) Developing standardized trainings for HAI researchers and animal handlers, (5) Formalizing procedures for coordinating IRB and IACUC protocols, and (6) Forming a repository of established protocols and procedures for HAI research.

# Pet faces: Mechanisms underlying human-animal relationships

**FRANCESCA CIRULLI, Marta Borgi**

[francesca.cirulli@iss.it](mailto:francesca.cirulli@iss.it)

*Istituto Superiore di Sanità, Rome, Italy*

Accumulating behavioral and neurophysiological studies support the idea of infantile (cute) faces as highly biologically relevant stimuli rapidly and unconsciously capturing attention and eliciting positive/ affectionate behaviors, including willingness to care.

Compared to human-human communication, in human-animal interactions a more central role of facial signals can be hypothesized, mainly due to the absence of verbal language. It has been hypothesized that the presence of infantile physical and behavioral features in pet animals (i.e. dogs and cats) might form the basis of our attraction to these species. Preliminary evidence has indeed shown that the human attentional bias toward the baby schema may extend to animal facial configurations.

In this review, the role of facial cues, specifically of infantile traits and facial signals (i.e. eyes gaze) as emotional and communicative signals is highlighted and discussed as regulating the human-animal bond, similarly to what can be observed in the adult-infant interaction context. Particular emphasis is given to the neuroendocrine regulation of the social bond between humans and animals through oxytocin secretion.

The literature reviewed proves that attitudes towards animals, and the development of a bond with them, may, to some degree, depend on intrinsic attributes of the animal, including physical traits and aesthetical attributes. Specifically, facial cuteness is viewed not just as a releaser of care/parental behavior, but, more in general, as a trait motivating social engagement.

Existing evidence is still not conclusive and future research is needed to unravel both behavioral and neurophysiological mechanisms underlying human-animal social interactions and to what extent facial traits and facial signals may facilitate interspecific bond formation, an information which may have an impact on different fields, e.g. environmental psychology and education, therapy, animal welfare and management.

Borgi, M., Cogliati-Dezza, I., Brelsford, V., Meints, K., and Cirulli, F. (2014). Baby schema in human and animal faces induces cuteness perception and gaze allocation in children. *Front. Psychol.* 5, 411

Nagasawa, M., Mitsui, S., En, S., Ohtani, N., Ohta, M., Sakuma, Y., Onaka, T., Mogi, K., and Kikusui, T. (2015). Social evolution. Oxytocin-gaze positive loop and the coevolution of human-dog bonds. *Science* 348, 333-336

# Exploring Attitudes Toward Euthanasia Among Shelter Workers and Volunteers in Japan and the U.S.

**MAHO CAVALIER**

[mahocavalier@mac.com](mailto:mahocavalier@mac.com)

*Humane Society University Graduate Program, Animal Policy and Advocacy, Washington D.C., USA*

Conflicts between foreign and Japanese volunteers concerning decisions to euthanize animals that are in terminal condition were noted during anecdotal observation by this author at a Japanese animal rescue shelter. Thus, this research was undertaken to explore attitudes of shelter staff in Japan. As a point of comparison, U. S. shelter workers were also interviewed. Twenty current or former shelter workers (16 participants from Japan and 4 participants from the U.S.), ranging in age from 20 to 65, were interviewed. Face-to-face interviews were conducted with the Japanese participants; e-mail and/or Skype were used to conduct the interviews with the participants living in the U.S. Grounded theory was employed to analyze the interview data.

The analysis suggested that euthanasia is a difficult and emotional process for all of the participants, and many of them have experienced the “Caring-Killing Paradox” (Reeve et al., 2005). Both Japanese and U.S. participants indicated that euthanasia is a humane option to eliminate prolonged suffering of animals, and when their quality of life is greatly diminished. Most of them agree that euthanizing animals for space and behavioral reasons may not be fair and should be avoided.

There is a subtle yet notable characteristic among Japanese participants. They seem to be rather unsure about euthanasia in practice, while agreeing with and understanding its principle of eliminating suffering. This became more apparent when it comes to their pets. In short, it seems that there was some disparity between what they believe and what they actually do. In contrast, participants in the U.S. seemed to express, with confidence, that euthanasia is a humane option in certain cases for both shelter and owned companion animals. More research is needed to determine what influences this subtle difference, if it stems from cultural, religious or other factors.

Reeve, C.L., Rogelbert, S., Spitzmüller, C. & Digiacomio, N. (2005). The Caring-Killing. Paradox: Euthanasia-Related Strain Among Animal-Shelter Workers. *Journal of applied psychology*, 35, 1. p.119-143.

DOI: 10.1111/j.1559-1816.2005.tb02096.x

# Keeping goats in elementary schools and its educational possibilities in Japan

**SHIHO KUTSUMI**, Gen Watanabe, Naoko Koda

[s122693z@st.go.tuat.ac.jp](mailto:s122693z@st.go.tuat.ac.jp)

*Tokyo University of Agriculture and Technology, Fuchu, Tokyo, Japan*

Many Japanese elementary schools keep small animals for educational purposes, and effects and challenges of keeping small animals in schools have been investigated. However, although goats are medium-sized animals that are familiar to Japanese people, few practical studies have been conducted on keeping goats in schools. This study investigated effects and challenges of keeping goats in elementary schools, and discussed its educational possibilities.

A semi-structured interview survey was conducted with twelve staff members that are responsible for keeping goats in six elementary schools of Tokyo metropolitan area. They described the effects, problems and tips related to keeping goats. Moreover, participation observation was conducted on daily human-goat interactions in these schools.

Results indicated that generally, all 6-grade students could care for goats. Moreover, goats were used for teaching different school subjects and activities. Effect of keeping goats that was mentioned by staff in all six schools was that children developed an attachment to goats, developed an attitude of respecting living things, and developed interpersonal interactional skills, as a result of taking care of goats with others. Furthermore, some schools reported developing stronger ties with parents and neighbors through cooperating for goat keeping. Certain teachers had anxieties about the risk of injury to children when interacting with goats, before goat keeping was started. Other problems faced by schools included burden of taking care of goats on holidays, and insufficient knowledge about providing daily, as well as medical care for goats.

These results suggested a similarity in effects and challenges associated with keeping small animals, and goats in elementary schools, although the responsibility and the burden on the schools were higher for keeping goats than for keeping small animals. This was because of their bigger size, because children have to cooperate with other children in providing care, and because caretakers have to consider the inner state of goats when care-giving. However, it is suggested that goats could greatly stimulate interest, cooperation and empathy in children. Goats could expand different educational opportunities and bring about many positive effects on the development of children, especially in the Japanese culture that values group-oriented behaviors.

# Current opinions in clicker training best practice and their relation to the scientific study of clicker training

**LYNNA C FENG**, Tiffani J Howell, Ka Ching Chan, Pauleen C Bennett

[l.feng@latrobe.edu.au](mailto:l.feng@latrobe.edu.au)

*La Trobe University, Bendigo, VIC, Australia*

One of the most significant factors affecting the welfare of companion animals is their behaviour relative to the expectations of human caretakers. Given the importance of behaviour, surprisingly little research has examined the effectiveness of different training methods in applied settings.

Clicker training is a popular technique used in companion animal training. Anecdotal evidence of its effectiveness is abundant. However, the suggestion that using clickers increases the rate at which animals learn new behaviours has not been demonstrated in the published literature. Indeed, those few studies that have been published generally report the opposite, that clicker training offers no advantage relative to other methods based on positive reinforcement. A systematic qualitative analysis of popular clicker training books (n=7) along with interviews with self-identified dog trainers (n=12) suggests that current clicker training best practice recommendations are inconsistent with the methods used in the published literature.

We present these differences and discuss potential reasons why previous studies were unable to demonstrate any benefits of clicker training, as suggested by animal trainers' personal accounts.

We conclude by suggesting that, in order to best understand the role of clicker training in animal learning, future studies must begin with methods that more closely mirror real world applications.



# Children exposed to intimate partner violence: Examining the role of exposure to concomitant animal cruelty on children's externalizing behaviors

**NANI MOSKAL<sup>1</sup>**, Colleen Parker<sup>1</sup>, Ksenia Dombo<sup>1</sup>, Shelby McDonald<sup>1</sup>, James Williams<sup>2</sup>, Frank Ascione<sup>2</sup>

[moskalne@mymail.vcu.edu](mailto:moskalne@mymail.vcu.edu)

1. School of Social Work, Virginia Commonwealth University, Richmond, VA, USA

2. Graduate School of Social Work, University of Denver, Denver, Co, USA

## OBJECTIVE

Children's exposure to companion animal maltreatment may be an additional risk factor for compromised behavioral health among children living in households affected by domestic violence (DV). The aim of the current study was to examine externalizing behavioral correlates associated with children's exposure to DV in the presence or absence of exposure to co-occurring animal cruelty. Specifically, this study examined children's conduct and oppositional defiant problems, rule-breaking behavior, and aggression.

## METHOD

Data were collected as part of a larger longitudinal study on women and children's exposure to DV and animal abuse. Two hundred ninety-one mother-child dyads were recruited from 22 community-based DV agencies. Children in the study ranged in age from 7 to 12 years (47% female, 53% male). Child exposure to animal maltreatment was assessed via maternal report on the Pet Treatment Survey (PTS; Ascione, 2011). Children's behavioral symptomology was derived from maternal report on the Child Behavior Checklist (CBCL 6/18; Achenbach & Rescorla, 2001).

## RESULTS

Independent samples t-tests indicated that children who were exposed to a pet being hurt or killed in the home had significantly higher mean levels of conduct problems ( $t(102.93) = -6.05, p < .001$ ), oppositional defiant problems ( $t(288) = -5.03, p < .001$ ), rule breaking behavior ( $t(114.39) = -3.22, p < .05$ ), and aggression symptomology ( $t(105.52) = -3.74, p < .001$ ). In addition, children exposed to concomitant animal maltreatment had higher mean levels of generalized externalizing behavior ( $t(288) = -5.03, p < .001$ ) and total behavior problems ( $t(288) = -7.08, p < .001$ ).

## CONCLUSION

Results suggest that concomitant exposure to animal maltreatment may exacerbate externalizing symptomology among children who experience DV. Our findings support previous research documenting negative outcomes among children exposed to multiple forms of violence as well as the exacerbating effects of exposure to animal abuse on child outcomes. The results are discussed with attention to clinical practice and interventions for children who experience family violence.

Achenbach, T., & Rescorla, L. (2001). Manual for the ASEBA school-age forms & profiles. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Ascione, F. R. (2011). Pet Treatment Survey. Unpublished rating scale.

# CAOVIDA CLUB: a non-profit, one health approach to childhood obesity

**JORGE PINTO FERREIRA<sup>1</sup>**, Joana Moreira<sup>1</sup>, Luis Santos<sup>1</sup>, Sandra Abreu<sup>1,2</sup>

[jorge.pinto.ferreira@caovida.com](mailto:jorge.pinto.ferreira@caovida.com)

1. CAOVIDA CLUB, Porto, Portugal

2. Research Centre for Physical Activity, Health and Leisure, Faculty of Sport, University of Porto, Porto, Portugal

Childhood obesity is currently recognized as one of the major global health problems. Bringing a child weight back to a healthy percentile can be a quite challenging task...can walking the dog help? The related one health literature available does not provide a simple answer. Studies found conflicting results. In general, it does seem that families that are dog owners have increased physical activity, but this does not always lead to losing weight.

CAOVIDA CLUB ([www.caovida.com](http://www.caovida.com)), is a non-profit based Portugal, founded in 2013, after a successful personal experience. We wanted to scientifically further validate this personal experience and therefore conducted a pilot study to verify the impact of an one health intervention on obesity. The study included 7 obese children (5 girls) aged 9 to 16 years old. The intervention consisted in physical activity assisted by dogs and lasted 4 months. Anthropometric measurements (weight and height) were assessed according to standard protocols, and age- and sex-specific BMI z scores were computed based on the WHO Growth References; body fat percentage was measured with a bioelectric impedance scale. All measurements were performed at baseline and at the end of the intervention. For repeated measures, the paired-sample t test was used. A P value less than .05 was regarded as significant. All analyses were performed using PASW Statistic v.22 (SPSS, Chicago, IL, USA). After intervention children had lower body fat percentage (mean differences $\pm$  SD: 1.5 $\pm$ 1.2 %,  $p=0.012$ ). No differences were seen in body mass index z-score (mean differences $\pm$  SD: 0.15 $\pm$ 0.16 kg/m<sup>2</sup>,  $p=0.063$ ).

As a follow-up of this pilot study, we are now providing assistance to about 10 kids, including three with special needs. Besides physical activity, we also provide support in the areas of nutrition and psychology.

Being aware of the small sample size, our findings suggest that dog-assisted physical activity can represent a possible solution to fight childhood obesity.

Westgarth, C.; Christley, R. M. and Christian, H. E. 2014. How might we increase physical activity through dog walking?: A comprehensive review of dog walking correlates. *International Journal of Behavioural Nutrition and Physical Activity*, 11:8

# Six in-depth case studies of unsuccessful guide dog partnerships

**CHANTELLE WHELAN<sup>1</sup>**, Lucy Asher<sup>2</sup>, Kathryn Almack<sup>1</sup>, Gary England<sup>1</sup>, Sarah Freeman<sup>1</sup>

[stxcw8@nottingham.ac.uk](mailto:stxcw8@nottingham.ac.uk)

1. University of Nottingham, Nottingham, UK

2. University of Newcastle, Newcastle, UK

Guide Dogs is the largest guide dogs school in the world and has one of the highest qualification rates. However approximately 15% of partnerships end prematurely due to behavioural problems in the dog. There has been little research into understanding the possible reasons for premature retirement of guide dogs. Given the investment and rigorous training schedule implemented by Guide Dogs, this study adds an important contribution to addressing this gap in knowledge.

Six in-depth case studies were conducted on guide dog partnerships that worked together for less than three years. The partnerships under investigation were made up of a guide dog and its owner. The owners ranged from 27 to 80 years of age; four were male and two female. Three dogs were female and three male. In each case the guide dog owner, puppy walker and re-homer were interviewed about the partnership and the dog. Thematic analysis was performed on these accounts to highlight emerging themes. In addition, reports written by Guide Dogs' staff on the dog's behaviour and working partnership was analysed using content analysis. The analysis of multiple sources of data helped to identify what may have led to the dog's retirement in each case and cross case analysis highlighted themes across cases.

The findings highlighted the complex nature of the partnership and the need for the dog and owner to balance the work and pet relationship. This requires compatibility between the two in their work as well as their social and home environments. In each case, whilst most components of the relationship worked well, when one of these wasn't working it led to the breakdown of the partnership. These results illustrate the multitude of factors that need to be considered when matching a dog and owner.

Based on the findings from this study recommendations can be made on matching guide dog partnerships. This could also be applied to other assistance dogs and re-homing dogs from animal shelters. This multidisciplinary study highlights the importance of acknowledging both the owner and dog in human-dog dyads and the highly complex nature of the human-animal bond.

# Contexts and consequences of dog bites: clarifying myth from evidence

**CARRI WESTGARTH<sup>2</sup>**, James Oxley<sup>1</sup>, Robert Christley<sup>2</sup>

[carri.westgarth@liverpool.ac.uk](mailto:carri.westgarth@liverpool.ac.uk)

1. *Independent Researcher, Essex, UK*
2. *University of Liverpool, Liverpool, UK*

Dog bites are a considerable public health concern relating to pet ownership. The majority of research gathers information about reported dog bites through hospital accident and emergency departments or newspapers. However, this data is limited to severe bites and little is recorded about the actual context of bite events. Therefore, the aim of the study was to gather preliminary information on the variety of contexts of dog bite incidents and consequences for both the victim and the dog.

A convenience-based online questionnaire, distributed through social media, targeted individuals who self-identified as having been previously bitten by a dog, were over 18 and lived in the UK.

A total of 484 dog bite victims completed the online survey about their most recent bite incident (ranging from 1957-2016). 72.5% of respondents were female and were aged between 1 - 77 years when bitten, with 52.6% being under 30 years of age. Nearly all victims described an incident where they were bitten by one dog (96.7%) and only one bite occurred (86.0%). In the majority of incidents (59.5%) the victim was with another person at the time of the bite. Immediately prior to the incident, it was slightly more common for the dog to approach the victim (49.5%) than the victim approach the dog (45.5%). The body regions most bitten were the hands and/or lower arms (54.4%). Over half (62.3%) of victims did not require medical treatment and even if treatment was sought only 10.2% of these were admitted to hospital. The dogs involved were mainly noted as adult known breeds and 69.8% were either medium or large in size. In the majority of cases the dog involved was reportedly male (52.4% versus 24.4% female) and known to the victim (66.1%). In 53.3% of incidents nothing happened to the dog involved and only 8.7% of dogs received training/behavioural treatment as a consequence.

This study highlights that the majority of dog bites are not captured by common research data methods. It also suggests that the contexts of dog bite incidents are varied and often do not involve the victim initiating contact with the dog.

# What is a dog bite?: Definitions of a dog bite as reported by victims in the UK

**CARRI WESTGARTH<sup>2</sup>**, James Oxley<sup>1</sup>, Robert Christley<sup>2</sup>

[carri.westgarth@liverpool.ac.uk](mailto:carri.westgarth@liverpool.ac.uk)

1. Independent Researcher, Essex, UK
2. University of Liverpool, Liverpool, UK

Dog bites are a topic of common research interest, due to the public health impacts. However, there has been little research into how dog bites are actually defined, by researchers or lay public. Therefore the aim of this study was to investigate how dog bite victims define what is, and what is not, a dog bite. A convenience-based online questionnaire, distributed through social media, targeted individuals who self-identified as having been previously bitten by a dog, were over 18 and lived in the UK. The survey included a number of descriptions of potential dog bites (based on Ian Dunbar's severity scale) and asked yes/no to whether the respondent thought this was a dog bite. Further, views on a number of dog bite related statements were collected using 'Likert'-based scales.

In total 484 dog bite victims completed the survey. Opinions regarding the definition of a dog bite varied. For example, 45.5% of individuals considered it a dog bite if a "dog only made contact with clothing", while 54.5% did not. Similarly, 37.2% did not define as a dog bite situation where a dog made "skin contact by teeth but no skin puncture or bruising". However, this decreased to 18.5% if a dog made "skin contact by teeth and bruising but no skin puncture". Furthermore, 45.1% either agreed or strongly agreed with the following statement "If a bite occurred whilst a dog was playing it would not be a real dog bite", suggesting that perception of 'intention' is important to interpretation. There was some evidence suggesting that victims who had ever owned dogs were more likely to agree than those who had never owned dogs ( $P=0.06$ ).

Overall, this research has identified that perceptions of self-identified bite-victims about what constitutes a dog bite are varied and complex, but consensus begins to emerge once bruising or puncture occurs. Further investigation is required to more fully understand the ways in which people define dog bites in order to develop clear case definitions required to evaluate prevalence and to study risk factors.

# A qualitative approach exploring the psychological benefits of guide dog ownership

**ESTELLE VICKERY**

*estelle.vickery@hartpury.ac.uk*

*Hartpury college, Gloucester, UK*

Depression and anxiety are by far the most common mental health diagnoses made. Treatment options vary in type and effectiveness which often results in high reoccurrence rates. Disability is a major cause of depression with pain, loss of independence and inability to perform everyday tasks being main contributors. Visual impairment is a disability affecting millions of people worldwide, for which assistance dogs are regularly utilised. While pets have long been noted for their psychological, emotional and social benefits, there is limited research into how assistance dogs can help prevent and mitigate symptoms of mental ill health.

The aim of this study was to build on previous research and further explore the added psychological benefits of guide dog ownership from a qualitative perspective. Strict inclusion and exclusion criteria were included to ensure both validity of the study and the welfare of the participants. In-depth interviews were conducted with eight guide dog owners, seven female and one male, all between the ages of 20 and 60 years and all living in the UK. Interviews were recorded using a video recorder and later transcribed, coded and behavioural notes taken.

Through interviews, four emergent themes were identified; depression, anxiety, social context and relationship with guide dog. Some results of note are the expression by participants that their guide dog reduced many symptoms of their depression and anxiety, facilitated social interaction, initiated participation in social activities, increased confidence and independence, while also being a loyal companion. These findings are consistent with similar research and are supported by current literature.

From this study, it can be concluded that guide dog ownership not only serves to allow visually impaired people to have greater independence and mobility, but can also reduce depression and anxiety. This added psychological benefit may be able to be utilised in other types of assistance dog, however there are contributing factors that should be considered such as external support from friends and family, current treatment and the human-animal relationship. The results of this study highlight the need for further research exploring other assistance dog partnerships as well as factors surrounding the assistance dog themselves.

# Shooting dogs, human/animal interactions within the Rwandan genocide

**EDUARDO BARONA<sup>1</sup>, Elena Carrió<sup>1,2</sup>**

[fundacionyelcho@fundacionyelcho.org](mailto:fundacionyelcho@fundacionyelcho.org)

1. *Yelcho Foundation, Valencia, Valencian Community, Spain*

2. *Universidad Politécnica, Madrid, Spain*

Most studies have been focused on the phenomenon of genocide. This work, although it is within the context of the Rwandan genocide in 1994, specifically investigates human/animal interactions, analyzing the systematic killing of dogs during this period, by the United Nations (UN) and the Rwandan Patriotic Front (RPF).

Through reviewing different works<sup>1-5</sup>, we find that the UN, unable to stop the genocide, considered that the presence of dogs was a notorious health risk, since there was the possibility they feed on human cadavers. However, published reports do not support the existence of health alert under this kind of situations, except for the avoidance of major psychological harm in the human population. We propose that this health risk was socially constructed by the UN, which was representing its social role of protection of human life. In addition, we also suggest that the stray dogs were eliminated by the RPF to claim the honor of the bodies of their Tutsi compatriots. This type of violence has been studied in humans as Honor Based Violence. However, there is no knowledge on the use of this concept at interspecies level (human/animal).

Our work criticizes the anthropocentric conception of the social sciences and gives value to post-humanism. We ask for the need to incorporate the agency of animals in ethnography because of three reasons: first, we should not trivialize animal suffering or make the problem invisible, although the human population are living in extreme circumstances; second, to include animals in social studies means to include them in the universe of moral considerations to others; and finally, this inclusion represents an exceptional opportunity to better understand ourselves.

1. Armstrong (2002) *The Postcolonial Animal. Society and Animals*
2. Arseneault (2013) *On Canicide and Concern: Species Sovereignty in Western Accounts of Rwanda's Genocide. English Studies in Canada.*
3. Molloy (2011) *Dangerous dogs and the construction of the risk. Taylor & Signal. Theorizing animals.*
4. Morgan et al. (2009) *Management of Dead Bodies after Disasters: A Field Manual for First Responders.*
5. Sedem & Ferrer-Wreder (2014) *Fear of the Loss of Honor: Implications of Honor-Based Violence for the Development of Youth and Their Families.*

# Companion Animals Influence on the Caregiving Experience: A Proposed Model

**JESSICA BIBBO**

[jlbnq7@mail.missouri.edu](mailto:jlbnq7@mail.missouri.edu)

*University of Missouri, Columbia, MO, USA*

The role of informal caregiver for a person over the age of 65 is increasingly common in the United States. Caregiving is often stressful, but also rewarding and satisfying. Many factors influence the caregiving experience (e.g., time spent providing care, employment status, functional and cognitive abilities of the care recipient, the interpersonal relationship between caregiver and care recipient). One factor which has been overlooked by the literature is the care recipient's companion animal (CA). Older adults highly value their relationships to their CAs, often describing them as family members. CAs are also found to be motivators for health behaviors and provide an opportunity for older adults to offer nurturance at a time of increasing dependence upon others, particularly their informal caregivers. Older adults who require assistance meeting their own needs are likely to need assistance in meeting the needs of their dog or cat. This study investigates how recipients' CA influence the caregiving experience.

The model proposes that the caregiving outcomes of burden (i.e., stress and strain due to caregiving), satisfaction within the role, and mastery (i.e., subjective sense of being able to control and overcome obstacles related to caregiving) will be directly influenced by the care tasks performed by caregivers for CAs and the perceived costs of the older adults' CA guardianship. Furthermore, those associations will be moderated by the following variables: the caregiver's perception of the relationship between the care recipient and the CA, the relationship between caregiver and the care recipient, and/or the emotional relationship between the caregiver and the CA. This model will be tested with data from an online survey of caregivers recruited through established on-line caregiving support communities in the United States. Data will be analyzed using a series of path analyses for each outcome variable. Analyses will be conducted in SAS using a .05 level of significance. The preliminary results will be presented.



# Posttraumatic Stress, Anxiety, and Somatic Problems among Children Exposed to Domestic Violence and Animal Maltreatment

**KSENIA DOMBO<sup>1</sup>**, Colleen Parker<sup>1</sup>, Nani Moskal<sup>1</sup>, Shelby McDonald<sup>1</sup>, James Williams<sup>2</sup>, Frank Ascione<sup>2</sup>

[domboka@vcu.edu](mailto:domboka@vcu.edu)

1. Virginia Commonwealth University, Richmond, VA, USA

2. University of Denver, Denver, CO, USA

Recent research suggests that children exposed to animal cruelty are at increased risk for compromised social and mental health outcomes (McDonald et al., 2016). However, most studies in this area have examined the relationship between childhood exposure to animal cruelty and subsequent externalizing behavior problems (e.g., bullying and aggression). This study contributes to knowledge on the effects of childhood exposure to animal cruelty by examining the relationship between animal maltreatment exposure and internalizing and trauma symptomology (i.e., posttraumatic stress symptoms, anxiety, somatic problems) among children exposed to domestic violence (DV).

Participants included 291 mother-child dyads recruited from community-based domestic violence agencies. Mothers and children (7 to 12 years) were interviewed separately in confidential locations and given questionnaires that assessed the frequency and severity of animal cruelty in the home, children's exposure to animal cruelty, and children's behavioral symptomology. Children's internalizing and trauma symptomology were derived from maternal report on the Child Behavior Checklist (Achenbach & Rescorla, 2001). Child exposure to animal cruelty was measured using the Pet Treatment Survey (Ascione, 2011).

Independent samples t-tests indicated that children who had seen or heard about animals being hurt or killed in the home exhibited significantly higher levels of posttraumatic stress symptoms ( $t(102.93) = -6.05, p < .001$ ), somatic complaints ( $t(95.90) = -4.33, p < .001$ ), anxiety problems ( $t(102.08) = -6.16, p < .001$ ), and generalized internalizing problems ( $t(288) = -7.31, p < .001$ ).

Overall, these findings suggest that exposure to concomitant animal maltreatment may exacerbate the effect of childhood exposure to DV. Findings are discussed in the context of how human-animal relationships can inform clinical assessment and intervention.

Achenbach, T., & Rescorla, L. (2001). Manual for the ASEBA school-age forms & profiles. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Ascione, F. R. (2011). Pet Treatment Survey. Unpublished rating scale.

Ascione, F. R., & Shapiro, K. (2009). People and animals, kindness and cruelty: Research directions and policy implications. *Journal of Social Issues*, 65(3), 569-587.

McDonald, S. E., Graham-Bermann, S. A., Maternick, A., Ascione, F. R., & Williams, J. H. (2016). Patterns of adjustment among children exposed to intimate partner violence: A person-centered approach. *Journal of Child & Adolescent Trauma*, 1-16.

# Canine-Child Bonding in Children with Autism Spectrum Disorder: Findings within and Across Case Studies

**JOHN-TYLER BINFET, Kathryn Struik**

[johntyler.binfet@ubc.ca](mailto:johntyler.binfet@ubc.ca)

*University of British Columbia, Kelowna, Canada*

## INTRODUCTION

Families impacted by Autism Spectrum Disorder (ASD) have become increasingly intrigued by the therapeutic effects that service dogs can have on children with ASD (Burrows, Adams, & Millman, 2008). Parents searching for trained service dogs however, face formidable obstacles surrounding the availability and cost of these dogs. Due to these challenges, parents may seek less formal routes to support their children with ASD, often adding companion dogs to their family. Despite enthusiasm for integrating companion dogs into the care plan, research identifying factors that influence children on the spectrum's ability to bond with a companion dog is meagre. For example, we lack an understanding of what might influence a child on the spectrum's ability to bond with a companion dog and how this bond can be established and nurtured. Given the nuanced interactions that exist to indicate the presence or absence of bonding (e.g., proximity and initiations of interactions and touch) this exploratory case study employed observations and interviews to gain insights into factors contributing to child-canine bonding.

## METHOD

Families (N=6), with a child aged 5-14 years with a confirmed diagnosis of ASD and their family canine, participated in the study. Three data sources were used to identify factors influencing child-canine bonding: 1) semi-structured interviews with the parent(s); 2) observations of child-canine interactions; and 3) field notes.

## RESULTS

Conventional content analysis (Hsieh & Shannon, 2005) was used to identify key themes arising in participants' interviews and in researcher observations of child-canine interactions and later verified by field notes. Cross-case analysis identified seven prevalent themes emerging that characterized child-canine bonding. The themes included: 1) Dog Acquisition (e.g., age of the dog when integrated into the family home); 2) Bonding Strategies (e.g., dog trained to sleep in child's bed); 3) Dog Characteristics (e.g., tolerant temperament); 4) Dog as Family Member (e.g., travels with the family); 5) Family Profile (e.g., parental experience with dogs); 6) Benefits (e.g., increased social interactions); and 7) Other (e.g., miscellaneous themes not fitting in categories above).

## DISCUSSION

The results are discussed within the context of innovative AAT in applied settings.

# Physical activity of the people with visual impairment: A preliminary study on how guide dogs facilitate their partners' physical activity

**MARIKO YAMAMOTO**

[mariko\\_yamamoto@hotmail.co.jp](mailto:mariko_yamamoto@hotmail.co.jp)

*Teikyo University of Science, Uenohara, Yamanashi, Japan*

Dog-walking can facilitate physical activity. Although most studies have been focused on people without disabilities, some have shown that guide dog partners walk for a longer duration than dog owners without visual impairment or pet dog/non-pet dog owners who have visual impairment in both Japan and the U.S. (Yamamoto & Hart, 2015). However, these studies did not conclude whether guide dogs facilitate their partners' walking or whether people applying for guide dogs were active even before they applied. A follow-up study is required to find the causal association. As a preliminary study, the usability of wearing and using a pedometer for people with visual impairment was assessed.

We selected the Active Style Pro HJA-750C (Omron, Japan). This device records data on step counts, the intensity of activity, and the duration of activity. The pedometers were sent to 10 visually impaired participants (8 males and 2 females) between the ages of 60 and 74, who were recruited through associations for people with visual impairments. The participants wore the pedometers for 1 week at all times, except when sleeping or bathing.

The data were collected without incident and the participants found the pedometers easy to wear and handle. All the participants needed to do was attach the pedometer to the waist of their pants using a clip, and no manipulation was required. The data in the pedometer could be analyzed and deleted using only a PC. Therefore, we could avoid either deleting data accidentally or missing recording data at all.

The participants walked 2935 steps (mean/day, S.D. 2321). Participants' physical activity varied a lot, and things such as work status and hobby type affected individual participants' data.

This preliminary study showed that data on the physical activity of people with visual impairments can be collected with ease. In the main study, the physical activity of people who will newly acquire a guide dog and non-guide dog partners can be collected and compared in this way.

Yamamoto, M., Yamamoto, M. M., & Hart, L. A. (2015). Physical activity and welfare of guide dogs and walking activity of their partners. *Anthrozoös*, 28, 277-289.

# Picture is Worth a Thousand Words: Using Children's Drawings as a Measure of the Human-Animal Bond

**CHRISTINE TARDIF-WILLIAMS**, Sandra Bosacki, Corrie Aldhelm-White

[ctardif@brocku.ca](mailto:ctardif@brocku.ca)

*Brock University, St. Catharines Ontario, Canada*

This collaborative community-based research study explored children's perceptions of their self-companion animal relationships before and after their involvement in a 10-week program (Tell Tails Reading offered by Therapy Tails Ontario).

Specifically, we explored whether reading with a dog is linked to children's understanding of the mental and emotional lives of their family-based CAs. Children's ability to understand the internal states of mind that guide their own and other people's behaviour, or Theory of Mind (ToM), is associated with socio-emotional and relational competencies (Astington, 1993). Similarly, socio-emotional and relational benefits are associated with children's emotional attachments with companion animals (CAs; e.g., Daly & Suggs, 2010; Endenburg & van Lith, 2010; Mueller, 2014b). However, little is known about children's understanding of the internal mental and emotional lives of CAs, and how this knowledge is linked to children's developing understanding of their own mental states and those of other significant people in their lives (e.g., parents, siblings, peers; Harter, 2006).

A total of 22 children aged 6-7 years in grades one and two participated in this study. Children attended a public school located in Ontario, Canada and data collection took place from September 2013 to January 2014. Children completed drawings and provided accompanying story descriptions of themselves with their CAs. Drawings and story descriptions were coded for language representing psychological issues (e.g., cognitive, physical, emotional). Ongoing data analysis focuses on pre- and post-program comparisons. We are also exploring gender differences in children's perceptions of self-companion animal relationships. Findings from this research will contribute to research on the role of CAs in the social and emotional lives of children.

# Exploring the Precipitating Factors Associated with the Decision for Older Youth to Engage in Animal Activism

**CORRIE ALDHELM-WHITE**, Christine Tardif-Williams

[ctardif@brocku.ca](mailto:ctardif@brocku.ca)

*Brock University, St. Catharines, Ontario, Canada*

While some young people are motivated to act mainly in self-interest (i.e., the degree to which one cares for their own well-being, at the potential expense of others), other youth prefer to help others (Engel, 2011). For some, this preference to help others translates into a strong affective desire to change the current status quo through activist commitments (Bennett, 2014).

This community-based research project explores the motivating factors associated with the decision for older youth to participate in animal rights activism. Particularly, this study explores some of the socio-demographic and family based factors (i.e., education, lifestyle, first event, and parental involvement), and individual psychological factors (i.e., gender, empathy and prosociality, and collective action/identity) associated with participation in animal rights activism. As a comparison, this study also explores these same motivational factors among older youth who are involved in a human-based rights group (i.e., disability rights). Studies have suggested that there is a difference in the motivating factors between people who participate in human-based versus post-citizenship movements (i.e., environmental and animal rights; Lowe & Ginsberg, 2002; Pallotta, 2005).

Participants for this study range in age from 18 - 25 years (5 to 10 from each animal and disability rights movements) and are currently being recruited from both the community and Brock University, located in Ontario, Canada. Participants will be interviewed about why they decided to participate in activism. Analysis will focus on the coding of emerging themes regarding why older youth decide to participate in animal rights activism. The data will be compared for differences and similarities in motivational factors between youth engaging in animal versus human-based rights movements. This study's findings will contribute to theory and research that aims to understand the factors motivating older youth and young adults to engage in animal rights activism.

# Therapy Dogs in the Classroom: A Review of Current Canadian Educational Policies

**CHRISTINE TARDIF-WILLIAMS**, Corrie Aldhelm-White

[ctardif@brocku.ca](mailto:ctardif@brocku.ca)

*Brock University, St. Catharines, Ontario, Canada*

Currently, research has shown that there is no nationwide policy surrounding Canadian schools' requirements for the inclusion of therapy animals in the classroom. Despite extant research, which suggests that therapy animals are beneficial to both a child's psychological and social development, no policy currently exists to address the growing need for therapy animals in the classroom context.

For years, Canadian service dogs and children have worked together within both educational and community contexts (e.g., Canadian Guide Dogs for the Blind, Canadian Service Dogs for people who have diabetes or seizures). However, the issue of engaging Canadian Therapy or Emotional Support Animals within an educational context to help children who face other challenges (e.g., mental health challenges such as anxiety, posttraumatic stress disorder, autism) is less clear; there is no standard policy that highlights the necessary steps required to ensure that these children are provided with the therapy animal option for their classroom needs.

This paper will review current practices within a Canadian educational context, and will address the serious need for policy development on this increasingly important issue.

# Order in the Courtroom: A Review of Current Canadian Policies Pertaining to Dogs in the Courthouse

**CORRIE ALDHELM-WHITE**, Christine Tardif-Williams

[ctardif@brocku.ca](mailto:ctardif@brocku.ca)

*Brock University, St. Catharines, Ontario, Canada*

For years, court trained therapy dogs have been allowed, at the judge's discretion, to accompany children during an American trial that requires the child to testify as a victim, a witness, or both.

Research and anecdotal evidence suggests that these dogs are trained to react to a person experiencing high levels of stress, and that these dogs are well trained to mitigate that person's stress response and to provide him/her with comfort. However, this has only been the case for American courts. While Canadian courts have allowed this on very few occasions, this is not common practice and very few cases have been reported in which a court trained dog has been engaged during a trial.

This paper will review current Canadian policies related to the engagement of courtroom dogs, will discuss the potential benefits and challenges of engaging a courtroom dog during a trial, and will outline future considerations in engaging courtroom dogs in a Canadian context.

# Stakeholder attitudes to animal welfare during slaughter and transport in Asia

**MICHELLE SINCLAIR<sup>1</sup>**, Zulkifli Idrus<sup>2</sup>, Wang Yan<sup>3</sup>, Duong Van Nhiem<sup>4</sup>, Pongchan Na\_Lampang<sup>4</sup>, Sarah Zito<sup>1</sup>, Clive Phillips<sup>1</sup>

[m.sinclair6@uq.edu.au](mailto:m.sinclair6@uq.edu.au)

1. *University of Queensland School of Veterinary Science, Queensland, Australia*
2. *University Putra Malaysia, School of Veterinary Science, Kuala Lumpur, Malaysia*
3. *Southern China Agricultural University, Livestock Ecology Lab, Guangdong, China*
4. *Vietnam National University of Agriculture, School of Veterinary Science, Hanoi, Viet Nam*
5. *Suranaree University of Technology, Nakhon Ratchasima, Thailand*

In an increasingly global and progressive landscape, not-for-profit led initiatives are less bound by geographical borders. However, operating across borders without respect, understanding and local engagement is fraught with danger and failure. Understanding the cross-cultural relationships and reasons for the nature of interaction between humans and other species is of paramount importance when initiating international animal welfare programs.

This study aimed to understand the attitudes of the stakeholders in the most prominent positions to make positive change to the welfare of animals during slaughter and transport; slaughtermen, transporters, senior veterinarians, tertiary and academic professionals in agriculture, and policy makers. Stakeholders (n 1027) in China, Thailand, Viet Nam and Malaysia were surveyed about general attitudes to animal welfare, motivating factors and barriers to improving animal welfare during slaughter and transport and they were analysed for significant relationships with demographic factors. Respondents were 69% male, 31% female, of widely varied age and religion, with atheism (37%), Islam (7%) and Christianity (4%) the most common religions after Buddhism (43%).

Motivating factors (for example; religion, knowledge levels, monetary gain, availability of tools and resources, more pressing community issues, approval of supervisor and peers) were ranked according to their significance. When examined for demographic associations, nationality emerged as the most significant factor influencing attitude. It is concluded that significant differences exist between attitudes, motivators and barriers to improving animal welfare in different nations. This highlights the importance of understanding and operationally tailoring initiatives by country and region. It is suggested that nation, or more specifically, sociopolitical and cultural region, is a vitally important demographic for consideration in social development.



# Cat Ownership Perception and Caretaking Explored in an Internet Survey of People Associated with Cats

**SARAH ZITO<sup>1</sup>**, Dianne Vankan<sup>2</sup>, Pauleen Bennett<sup>3</sup>, Mandy Paterson<sup>4</sup>, Clive Phillips<sup>1</sup>

[s.zito@uq.edu.au](mailto:s.zito@uq.edu.au)

1. *Centre for Animal Welfare and Ethics, School of Veterinary Science, University of Queensland, Gatton, Queensland, Australia*
2. *School of Veterinary Science, University of Queensland, Gatton, Queensland, Australia*
3. *School of Psychology and Public Health, La Trobe University, Bendigo, Victoria, Australia*
4. *RSPCA Queensland, Wacol, Queensland, Australia*

People who feed cats that they do not perceive they own (sometimes called semi-owners) are little understood but are thought to make a considerable contribution to unwanted cat numbers because the cats they support are generally not sterilized. Understanding people's perception of cat ownership and the psychology underlying cat semi-ownership could both improve understanding of this human-cat relationship and inform approaches to mitigate the negative effects of cat semi-ownership.

The primary aims of this study were to investigate cat ownership perception and to examine its association with human-cat interactions and caretaking behaviours. A secondary aim was to evaluate a definition of cat semi-ownership (including an association time of  $\geq 1$  month and frequent feeding), revised from a previous definition proposed in the literature (Toukhsati, et al., 2007) to distinguish cat semi-ownership from casual interactions with unowned cats. Cat owners and semi-owners displayed similar types of interactions and caretaking behaviours. Nevertheless, caretaking behaviours were more commonly displayed towards owned cats than semi-owned cats, and semi-owned cats were more likely to have produced kittens ( $p < 0.01$ ). All interactions and caretaking behaviours were more likely to be displayed towards cats in semi-ownership relationships compared to casual interaction relationships. Determinants of cat ownership perception were identified ( $p < 0.05$ ) and included association time, attachment, perceived cat friendliness and health, and feelings about unowned cats, including the acceptability of feeding unowned cats.

This research increases understanding of the human-cat relationship of semi-ownership and the associated attitudes, beliefs, social norms, perceived behavioural control factors and behaviours. In addition, this research enabled semi-ownership to be distinguished from casual interaction relationships and can assist welfare and government agencies to identify cat semi-owners in order to develop strategies to address this source of unwanted cats. Encouraging semi-owners to have the cats they care for sterilized may assist in reducing the number of unwanted kittens and could be a valuable alternative to trying to prevent semi-ownership entirely. Highly accessible semi-owner "gatekeepers" could help to deliver education messages and facilitate the provision of cat sterilization services to semi-owners.

Toukhsati, S. R., et al. (2007). "Behaviors and Attitudes towards Semi-Owned Cats." *Anthrozoos* 20: 131-142.

# Animal welfare issues in transport and slaughter in the Chinese livestock industry

**SARAH ZITO<sup>1</sup>**, Michelle Sinclair<sup>1</sup>, Yan Wang<sup>2</sup>, Clive Phillips<sup>1</sup>

[s.zito@uq.edu.au](mailto:s.zito@uq.edu.au)

1. *Centre for Animal Welfare and Ethics, School of Veterinary Science, University of Queensland, Gatton, Queensland, Australia*
2. *Southern China Agricultural University, Livestock Ecology Lab, Guangdong, China*

China is now the world's largest livestock producer and, in addition, is one of the world's largest meat consumers. The huge scale of livestock production and production intensification in China has resulted in animal welfare concerns on an unprecedented scale both in terms of numbers of animals and the welfare conditions involved. Despite a relatively low level of awareness of and little previous emphasis on animal welfare issues in China there is a growing public concern for animal welfare in the country. In addition, China's trade partners in both the import and export markets have expressed concern that animal welfare standards may not meet international standards and the Chinese livestock industry has recognised that trade with overseas partners will require attention to animal welfare in order to comply with international standards.

Successful management of issues involving human-animal relationships such as welfare concerns in livestock industries requires involvement of stakeholders in the definition of the problem to be addressed, decision-making and development of relevant and targeted strategies informed by research. Engaging stakeholders in the Chinese livestock industry to improve animal welfare first requires an understanding of the perceived welfare issues but little is known of specific welfare concerns in livestock transport and slaughter in China. The objective of this study was to establish perceived animal welfare issues in livestock slaughter and transport in China by surveying industry stakeholders. Adaptive Conjoint Analysis was used to identify stakeholder animal welfare concerns and rank them in order of perceived importance. Perceived animal welfare concerns were then examined for associations with demographic factors using regression and multivariate analyses. This information is anticipated to improve understanding of animal welfare issues in transport and slaughter in the Chinese livestock industry and inform the direction of future projects aimed at improving livestock welfare.

# Care and treatment of companion animals in households experiencing domestic violence: The role of veterinary professionals in addressing multidirectional violence involving pets

COLLEEN PARKER<sup>1</sup>, Ksenia Dombo<sup>1</sup>, Anna Maternick<sup>1</sup>, Nani Moskal<sup>1</sup>, Shelby McDonald<sup>1,2</sup>, James Williams<sup>2</sup>, Frank Ascione<sup>2</sup>

[parkercm2@mymail.vcu.edu](mailto:parkercm2@mymail.vcu.edu)

1. School of Social Work, Virginia Commonwealth University, Richmond, Virginia, USA

2. Graduate School of Social Work, University of Denver, Denver, Colorado, USA

## BACKGROUND

This study reports quantitative and qualitative findings pertaining to veterinary care of companion animals among families that receive community-based domestic violence (DV) services. Specifically, we examined the rate and quality of veterinary care among pets in households affected by DV as well as treatment of pets by abusive partners and their children.

## METHOD

Data were collected as part of a mixed methods phenomenological research study. Two hundred and ninety-one women (73% racial or ethnic minority) with children between the ages of 7 and 12 were recruited from 22 domestic violence agencies in a western state. Qualitative data were analyzed using the method of template analysis. Quantitative data were analyzed using descriptive statistics and chi-square tests of independence.

## RESULTS

Among participants with pet cats, 39% reported that their pet did not receive regular veterinary care; among participants with dogs, 34% reported that their pet did not receive regular veterinary care. Twenty-five percent of participants reported that their partner had hurt or killed a pet, and 7% reported that their child, who was participating in the study, had hurt or killed a pet on purpose. A chi-square test of independence indicated that animal maltreatment by a partner was related to an absence of regular veterinary care of companion animals in the home at the level of a statistical trend ( $\chi^2(1) = 3.00, p = .08$ ). Qualitative findings included: 1) Preventing Regular and Emergency Veterinary Care as a Means of Coercive Control by Partners and 2) Veterinary Professionals' Involvement in Incidents of Animal Abuse in the Context of DV.

## DISCUSSION

Our quantitative and qualitative findings highlight the vital role that veterinary professionals may play in recognizing and intervening in incidents resulting from domestic violence. The value of veterinary professionals' involvement in assessment of DV situations has long been overlooked due to lack of awareness about the intersection of DV and animal abuse. We discuss the role that veterinary health care providers may serve in efforts to address animal maltreatment and connect IPV survivors and their pets with appropriate community services. Implications for training among veterinary professionals are discussed.

# Attitudes toward animals and support for animal protection policies

**MYUNG-SUN CHUN<sup>1</sup>**, Hang Lee<sup>1</sup>, Joon Kim<sup>1</sup>, Ki-Soo Eun<sup>2</sup>

[jdchun@snu.ac.kr](mailto:jdchun@snu.ac.kr)

1. College of Veterinary Medicine, Seoul National University, Seoul, Republic of Korea

2. Graduate School of International Studies, Seoul National University, Seoul, Republic of Korea

Since Animal Protection Law was enacted in Republic of Korea in 2007 advocating for animal protection policies has increased. Yet there is lack of studies on mechanism of support for pro-animal policies.

This study was designed for analyzing the demographic characteristics and animal attitudes as influencing factors on the support for the animal protection policies in Republic of Korea. In the face-to-face survey from the 9th of May to 5th of June, 2014 one thousand participants (male 510; female 490) completed a structured questionnaire on degree of support for wild animal protection, wild animal conservation, funding animal protection organization and animal shelter management. Survey respondents were selected by Multi-Stage Stratified Systematic Sampling. To find the influencing factors, AA (attitude toward animals), BAM (belief in animal mind), BAV (belief in animal value), and demographic characteristics (age, gender, religion, political preference, house income, education, pet breeding experience) were asked to answer.

The result of the hierarchical regression analysis with animal protection policies using the SPSS was presented in 2 models. In model 1 ( $R^2=0.045$ ,  $F= 4.209$ ,  $p<0.05$ ) which selected demographic characteristics as independent variable, age ( $\beta=-0.085$ ,  $t=-2.344$ ,  $p<0.05$ ) and pet keeping experience ( $\beta=0.149$ ,  $t=4.766$ ,  $p<0.05$ ) showed positive correlation with support to animal protection policies. Other variables such as gender, religion, political preference, house income and education were not significantly correlated. In the model 2 AA, BAM and BAV explained additional 31.8% of the variance ( $R^2=0.363$ ,  $F= 40.062$ ,  $p<0.01$ ). AA ( $\beta=0.165$ ,  $t=5.460$ ,  $p<0.01$ ), BAM ( $\beta=0.180$ ,  $t=5.348$ ,  $p<0.05$ ), and BAV ( $\beta=0.368$ ,  $t=11.597$ ,  $p<0.05$ ) were significantly related with support for animal protection policies.

The results show that AA, BAM, and BAV are powerful and consistent predictor of support for animal welfare and protection. These animal attitude and belief on animal minds are known to be acquired by experiences and education on animal welfare. Therefore pro-animal policies are expected to attract more support through animal welfare education and campaign.

# Pets in a family and social relation in Republic of Korea

**MYUNG-SUN CHUN<sup>1</sup>**, Hang Lee<sup>1</sup>, Joon Kim<sup>1</sup>, Ki-Soo Eun<sup>2</sup>

[jdchun@snu.ac.kr](mailto:jdchun@snu.ac.kr)

1. College of Veterinary Medicine, Seoul National University, Seoul, Republic of Korea

2. Graduate School of International Studies, Seoul National University, Seoul, Republic of Korea

Although one-fifth of Korean families have pets, studies on the pet-human relation in a family are limited. Also there are still myths on pet owners; they keep a pet because they feel lonely and have little social relation.

In our study the result of the national wide survey on experience of pet keeping in a family from the 9th of May to 5th of June, 2014 was analyzed (n=1,000); pet animal species, years of pet-keeping, reason of pet-keeping, status of a pet in family and owner's social relation. The three fourths of the participants (n=757) have a pet or have had a pet before. There was no statistical difference in pet ownership in groups of gender, age, religion, political preference, family income, education, marriage status, and residency type. A dog is the most preferred pet animal (n=134). Cats, fish and birds are also be loved as pets. About 13% of the participants who have or have had a pet, kept their pets over 10 years. They keep pets because pets are cute and lovely (34.6%) and other family members want to have a pet (42.5%). Only 3.8% of respondents keep a pet to compensate for their loneliness. Of the 217 participants who currently keep pets 36.7% regard their pets as family members and 50.3% think their pets as important as their family members. Over 80% of them are certain that they can share their feeling with their pets.

To investigate difference in social relation between people who have or have had a pet before and who do not the participants were asked to answer about frequency of contact with family, friends and neighbors and trust in family, neighbors and strangers. Except contact with family (p=0.013) and trust in strangers (p=0.048) there was no significant difference in social relation between the two groups.

The survey results indicated the improving status of pets in a family although the Confucian family culture can be a barrier against accepting a pet as a family member. Negative myths on pet ownership in Republic Korea were disproved.

# Using YouTube to study dog bites. Analysis of context and perception of risk

**SARA OWCZARCZAK-GARSTECKA**, Carri Westgarth, Francine Watkins, Rob Christley, Ian Donald, Huadong Yang

[s.owczarczak-garstecka@liverpool.ac.uk](mailto:s.owczarczak-garstecka@liverpool.ac.uk)

*University of Liverpool, Liverpool, UK*

Dog bites are often studied retrospectively, precluding direct observation of interactions prior to the bite. YouTube offers a platform to observe dog bites directly. This study aimed to i) describe the context and characteristics of dog bites in the posted videos, and ii) identify what YouTube video comments elucidate about how viewers assess risk in human-dog interactions.

Eighty-nine videos of dog bites were identified using relevant search terms. The context of human-dog interactions prior to the bite was recorded for each video and victims' and dogs' behavioural and demographic characteristics were described. A random selection of comments underneath 12 videos, chosen to represent a diversity of victims and contexts, were analysed qualitatively for emerging themes.

Rough and tumble play accounted for 20% of all bites observed on videos. Petting, hugging or kissing dogs accounted for only 9% of bites. Eight per cent of all bites appeared to have territorial contexts. Men were observed to be bitten more often than women (73%). Mongrels were more common than any other dog type or breed (24%). Overall, 76% of bites were described as 'mild' (single bite of a short duration resulting in no puncture wound).

Qualitative analyses of video comments indicated that when dogs were of breeds/types perceived as dangerous (e.g. 'pit bulls', Rottweilers), risk was attributed to aspects of a dog's biology rather than the interactions preceding the bite. By contrast, when dogs were of other breeds/types, victims were often described as "deserving a bite" due to their actions. The responsibility for a bite was often attributed to both the owner and the victim, unless the victim was a child in which case the blame was directed at the parents. Viewers' perceptions of the bites varied, some describing them as only "warning nips", or, bites that occurred during play as "safe" and "normal".

This study reveals that most bites posted on YouTube occur in the context of routine interactions with the dog, including a significant proportion occurring during 'play' rather than stress/fear contexts. Analysis of such videos can help to identify pre-conceptions around dog bites that need addressing in bite prevention interventions.

# Attitude towards pets in veterinary surgeons: a comparison between female and male veterinarians in Italy

CHIARA MARITI<sup>1</sup>, Angelo Gazzano<sup>1</sup>, Sabrina Giussani<sup>2</sup>

[chiara.mariti@unipi.it](mailto:chiara.mariti@unipi.it)

1. Dep. Veterinary Sciences - University of Pisa, Pisa, Italy

2. SISCA, Società Italiana Scienze del Comportamento Animale, Cremona, Italy

The existence of gender differences in both attitudes and behaviour towards animals is a widespread phenomenon, and it is likely to exist also in professional categories such as veterinary surgeons. The aim of this study was to investigate possible differences in female and male veterinarians' attitude towards animals.

A convenience sample of veterinary surgeons in the field of small animals was recruited to participate at an online survey. All respondents completed a questionnaire regarding personal data as well as items related to their position about the importance of the Brambell's five freedoms for the welfare of pet species and their actual protection. The questionnaire also included the Italian back-translated 20-item ethics subscale of the Animal Attitude Scale (AAS) (Herzog, Betchart & Pittman, 1991).

Participants were 377, 41.1±9.4 years old, graduated in the period 1974-2015, working in different areas of Italy. The sample was formed by 261 female and 76 male veterinary surgeons. The answers provided by the two genders were compared using the Mann Whitney U test ( $p < 0.05$ ).

The statistical analysis revealed significant gender differences for most of the attitude measures. In detail, women were found to consider more important, for the well-being of pets, the provision of an appropriate physical environment ( $U=7574.00$ ;  $p < 0.001$ ), the freedom to express normal behaviour ( $U=8400.00$ ;  $p=0.012$ ), and the freedom from fear and distress ( $U=8432.00$ ;  $p=0.012$ ). In addition, women showed a higher AAS total score ( $78.8 \pm 11.4$  versus  $72.1 \pm 13.7$ ;  $U=7062.00$ ;  $p < 0.001$ ).

However, no difference was found for the answers provided by women and men to items of AAS regarding pets, specifically where dog-fighting and dog shelters were mentioned.

As hypothesized, gender affected the answers. Female veterinarians showed more concern for animal welfare issues than did males both in terms of importance given to the five freedoms for the welfare of pet animals and in sensitivity to animal use by humans.

Further research should clarify whether such gender dissimilarity may imply relevant differences in the care and suggestions provided to owners when working as veterinary surgeons.

Herzog, HA Jr, Betchart, NS & Pittman, PB. 1991. Gender, Sex Role Orientation, And Attitudes Toward Animals. *Anthrozoös*, IV (3): 184-191.

# To Eat or to Pet? : A Comparative Analysis of Images of Animal Eating in Japan

**NORIKO NIJIMA<sup>1</sup>**, Azusa Takahashi<sup>1</sup>, Hideo Suzuki<sup>2</sup>

[n-nijima@yamazaki.ac.jp](mailto:n-nijima@yamazaki.ac.jp)

1. Yamazaki Gakuen University, Hachioji, Tokyo, Japan

2. Tokyo university of Information Sciences, Chiba, Chiba, Japan

## BACKGROUND

In some Asian countries, it is culturally acceptable to eat dogs, while in Japan, we usually see dogs as lovely pet animals. How do we separate animals for eating from those we keep as pets? This is an issue possibly invoking ethical debates, however, there is a paucity of available analytical data on people's attitudes toward such choices. This study intends to ascertain Japanese people's attitudes toward animal eating, focusing particularly on the possibility of eating different breeds and the influence of their previous animal-related experiences on their choices.

## METHODS

Phase I: Relevant information on the history of animal consumption in Japan from the academic literature and newspaper articles was gathered. Phase II: Standardized questionnaires were developed by January 2016, containing 11 questions, taking 15-20 minutes to complete on a voluntary, anonymous basis, administered to 20+ year-old university students in Tokyo (n=126; 98 females and 28 males). The questionnaires included experiences of pet keeping, their impressions toward dog-eating cultures, and their attitudes regarding the possibility of eating meat from various animals in the future, using both open-response and multiple-choice questions. Data were analyzed by R ver.3.1.1, using Fisher's exact test and residual analysis.

## RESULTS AND CONCLUSION

The experience of keeping dogs and/or cats, shows no significant difference in the likelihood of whether respondents would choose to taste meat from either animal if given a chance to do so ( $p>0.05$ ). 86.5% of respondents would like to taste meat from a horse, 84.9% for whale, 80.1% for deer, 61.2% for dolphin, 61.1% for rabbit, 40.4 for dog, and 38.1% for cat. Among the animal breeds most likely to be kept as pets, rabbits are the ones more likely to be eaten - this is thought to be influenced by the fact that rabbits are the only animals in Japan which are kept both as pets and eaten as food. Detailed results will be presented.



# What Makes a Difference to Community Cats' Wellbeing?: Comparative Research on Successful and Unsuccessful areas of the Metropolitan Zones of Japan

**NORIKO NIIJIMA, Mari INOSE**

[n-nijima@yamazaki.ac.jp](mailto:n-nijima@yamazaki.ac.jp)

*Yamazaki Gakuen University, Hachioji, Tokyo, Japan*

## **BACKGROUND**

In Japan, we can see many stray and outdoor cats on the streets. We refer to both groups as 'community cats'. Some volunteers have a hard time, both economically and socially, feeding them, trapping them and having them spayed and neutered (TNR) without consent from local residents to do so, who suffer from the odor of excreta, midnight fights and screams.

Despite the limited budgets for community cats in Japan, some areas are successful at keeping the peace, while other areas have serious problems. However, few sociological comparative research studies have been conducted.

This study intends to derive the necessary conditions for the successful co-existence of community cats and local residents, by comparing the following criteria: - people's problems and needs, governmental services and attitudes, volunteers' needs and their attitudes toward community cats activities in both i) successful areas and ii) unsuccessful areas in/near the Metropolitan Tokyo area.

## **METHODS**

Various sources of information was gathered by interviewers from:- 1) local governmental health centers in charge of community cats, 2) local residents, and 3) volunteers who take care of community cats, in both i) X Ward (with an ordinance banning the mal-feeding of stray cats) , and in ii) Y city (operating cooperative governmental procedures for feeding and TNR) within/next to Tokyo, Japan.

This included the collection of background data and the current situations regarding relevant issues concerning community cats, residents, governments and volunteers, the amount and source of relevant information and the support policies of local governments and so on (n=8; 2 government people, 3 residents and 3 volunteers; 1-3 hours each). Interview data were audiotyped and analyzed by the KJ method.

## **RESULTS AND CONCLUSION**

The conditions which contributed to the differences between the two areas were: 1) local policies and procedures, 2) volunteers' heavy burdens in time and cost, and 3) size of information on TNR and so on. Detailed results will be presented.

# Temperature and heart and respiratory rates evaluation in therapist dogs during animal assisted intervention sessions for children with autistic spectrum disorder

**MAJA KRAGULJAC**, Aline Fernandes Melo, Giovana P. O. S. Anderlini, Jéssica M. A. da Costa, Eliane Santos

[arqueira@gmail.com](mailto:arqueira@gmail.com)

*Centro Universitário CESMAC, Maceió, Alagoas, Brazil*

The animal assisted interventions (AAI) have been asserting themselves more and more as complementary therapies for patients with special needs. Considering this increase, a greater concern with the health and welfare of therapist dogs, to ensure better performance during sessions and avoid risk to patients, is necessary (Yamamoto, Silva & Souza, 2012; Haubenhofner & Kirchengast, 2006).

The aim of this study was to evaluate body temperature (T), heart (HR) and respiratory rates (RR) of therapist dogs during AAI sessions for children with autistic spectrum disorder. The data were collected at one university extension project that works with canine animal assisted interventions. The final sample consisted of six dogs whose T, HR and RR values were measured before and after every AAI session, for six weeks, occurring each session once a week. Collected data were analyzed and averaged and the standard deviation of each animal calculated.

Results indicated that, when analyzing HR, a decrease was noted when comparing the pre and post session values. RR showed no significant differences when comparing between times, however in relation to T there was a significant difference for less (Wilcoxon test,  $p < 0.05$ ) at both time points when compared. Final data showed that there was no significant stress in the studied sample.

# Two dogs behaviour observation during the animal assisted interventions sessions

**MAJA KRAGULJAC**, Riclayne Barbosa Silva, Giovana P. O. S. Anderlini, Jéssica M. A. da Costa, Aline Fernandes Melo, Eliane Santos

[arqueira@gmail.com](mailto:arqueira@gmail.com)

*Centro Universitário CESMAC, Maceió, Alagoas, Brazil*

The Animal Assisted Interventions (AAI) can use animals as therapists to perform exercises together with human therapists, trying to stimulate the patient in physical and psychological senses, bringing benefits for the same (Dotti, 2005). The aim of the study was to observe, identify and characterize the behaviour of two therapist dogs, one beginner (DOG2) and another already with experience in sessions (DOG1), quantifying them.

The sample consisted of two dogs that attended the AAI sessions at one NGO in Maceio. One 20 minute duration session per week occurred, with each one of seven children that participated. The present study was observational, longitudinal and descriptive, conducted by the dog's behaviour identification and characterization during the AAI sessions, with the help of a comparative behaviour chart, developed by the scientific team. Obtained numbers for every behaviour presented by these two therapy dogs were transformed into percentuals.

Our results showed that both animals had following main behaviours: Calm (DOG1=100%; DOG2=100%), Alert (DOG1=66,7%; DOG2=100%), Asking for attention (DOG1=100%; DOG2=100%), Prepared to play (DOG1=100%; DOG2=100%) and Friendly (DOG1=100%; DOG2=100%). The results also showed that, in this case, the experience of the therapist dog was not the main factor in behaviour differentiation.

However, possibly animal training, socialization and late desensitization of one of the dogs influenced the findings. Nevertheless, to obtain more consistent results, more extensive behavioural studies are needed, involving a larger number of animals.

# Dogs-shelter operators relationship. The impact on human quality of life and their emotional sphere. A preliminary study

**LAURA ARENA**<sup>1,2</sup>, Greta Berteselli<sup>1</sup>, Lejila Valerii<sup>1</sup>, Ludovica Di Giustino<sup>1</sup>, Paolo Dalla Villa<sup>1</sup>

[larena@unite.it](mailto:larena@unite.it)

1. Zooprifilattico Sperimentale dell'Abruzzo e del Molise, Campo Boario, 64100, Teramo (TE), Italy

2. Faculty of Veterinary Medicine, University of Teramo, via R. Balzarini 1, 64100, Teramo (TE), Italy

Italian National Law on 'companion animals and stray dog population control' prohibits euthanasia of shelter dogs if they are not dangerous or seriously suffering (Dalla Villa et al., 2013). Free roaming dogs are captured and housed in long-term shelters until rehomed, adopted or dead (Cannas et al., 2014).

An increasing interest in the welfare of these animals is shown by scientific community but few information are available about the human sphere in shelters (Frommer and Arluke, 1999; Reve et al., 2005). Aim of this study is to evaluate the social relationship between dogs and shelter operators (employee and volunteers) and the impact of their job on their quality of life.

A questionnaire addressed to shelter operators was developed by multidisciplinary group of experts and it is structured in three main parts: general information, operators' skills, operators' welfare and emotional sphere. This questionnaire has been included into the Shelter Quality Protocol (Barnard et al., 2015) that is currently used to assess the welfare of dogs kept in long-term shelters, and it is meant to be distributed in 60 Italian shelters. To date, the questionnaire has been already distributed in 7 facilities and filled in by 29 operators. When data collection will be finished, a statistical correlation between animal welfare and human sphere will be carried out. Consequently, following results represent the preliminary ones. Most of respondents were employee (67%), female (62%) and over 40 years (66%). 66% of them works 4-7 days a week and 6-8 hours a day. All respondents declared to have an friendly/deep social relationship with all/most of sheltered dogs and, from results, the general feeling of dogs at the presence of operators is happiness. Respectively 45% and 38% of them, consider job as highly physically and moderately emotionally stressful; 57% of them scores as highly satisfactory the job and 38% declared to make compromises for their job. The main feelings of operators at the end of the day are happiness/satisfaction.

These preliminary results show that, in general, Italian shelter operators have a positive perception of their job although this have a stressful impact on their lives.

# What Happens to Oliver if I Die Out Here? Negotiating Urban and Social Agency Landscapes Living Homeless with Animal Companions

**GILLIAN SQUIRRELL**<sup>1,2</sup>

[homelesswithpets@gmail.com](mailto:homelesswithpets@gmail.com)

1. *Open Universiteit, Herleen, The Netherlands*

2. *Blue Dog Consulting, California, USA*

HomelessWithPets is based in Northern California. It combines ethnography (Wolcott, 2008), commonly used by 'sidewalk sociologists' (Dunier, 1999) and Action Research (Bradbury-Huang, 2015; Reason and Bradbury, 2012). The project, running for 24 months, is developing a deeper understanding of this little researched area of the HAB (Kidd and Kidd, 1994; Irvine et al 2013) and creating services to assist homeless people better care for animal companions.

The paper opens outlining actual and symbolic meanings of the HAB (Irvine, 2013; Squirrell, 2015) for homeless people (n=125). It explores the narratives of ten homeless people with animal companions as they navigate features of living in vehicles, encampments and on the streets. The paper tracks respondents' negotiations with agencies offering services, tracing the ways the HAB is perceived and how it may be accommodated into assessments and services.

The paper explores the impact of agencies' responses as respondents' make choices about their daily and future lives, and highlights how a supportive HAB can be rendered toxic in these circumstances. The paper compares the respondents' experiences and interpretations with agency staff interviews (n=30). The paper closes with recommendations on the HAB and homelessness.

# The relationship of health-related outcomes to behaviors with a dog during the Pet Assisted Living (PAL) study intervention for assisted living residents with cognitive impairment

**ERIKA FRIEDMANN<sup>1</sup>**, Elizabeth Galik<sup>1</sup>, Sue A. Thomas<sup>1</sup>, Sue Hall<sup>1</sup>, Jooyoung Cheon<sup>1</sup>, Narae Han<sup>1</sup>, Hee Jun Kim<sup>1</sup>, Nancy Gee<sup>2</sup>

[efrie002@son.umaryland.edu](mailto:efrie002@son.umaryland.edu)

1. University of Maryland School of Nursing, Baltimore, MD, USA

2. WALTHAM Centre for Pet Nutrition, Waltham-on-the-Wolds, Leicestershire, UK

Several recent studies report positive impact of animal assisted interventions on health and functional outcomes in older adults. Interventions rarely are described in sufficient detail for replication and behaviors of participants generally are not described or related to their outcomes. The Pet Assisted Living (PAL) study provides an opportunity to examine the relationship of participant behavior to outcomes. In the PAL study, 22 assisted living residents with mild to moderate cognitive impairment participated in a structured 12 week PAL intervention. The intervention led to increased physical activity (PA; 24 hour Actigraph) and decreased depressive symptoms (Cornell Scale for Depression in Dementia) compared with a reminiscing intervention.

The current analysis uses data from the PAL intervention group about the participation of residents in six behaviors during each intervention session to evaluate their relationships to changes in physical activity and depression. Residents of 4 small assisted living facilities were randomized to the PAL intervention. Each session included activities designed to encourage maintenance of function. Each resident participated in 23 to 28 bi-weekly sessions. PA and depression were assessed monthly. Participation in the activities in the PAL intervention varied between residents and over sessions. On average residents looked at the dog in 97%, talked to the dog in 83%, touched the dog in 82%, gave treats to the dog in 59%, brushed the dog in 42%, and walked the dog in 26% of the sessions. Some residents did not participate in specific activities in any session while participated in others in 100% of the sessions. In correlation analysis, rate of participation in looking at ( $r=.550$ ), brushing ( $r=.555$ ), and walking ( $r=.492$ ) the dog significantly predicted increases in PA and walking the dog predicted decreases in depression ( $r=.521$ ) over the intervention period. Frequency of activity participation varied. Specific activities with the dog were related to improvements in both physical activity and depression over time. Amount of touching the dog was not significantly related to improvement in depression or PA. Assessment of behaviors during interventions may enable evaluation of what behaviors predict target outcomes and personalization of activities for outcomes and individuals.

# Can playful handling (tickling) improve human-rat interactions at pet stores?

**MEGAN R. LAFOLLETTE**, Brianna N. Gaskill, Marguerite E. O'Haire

[lafollet@purdue.edu](mailto:lafollet@purdue.edu)

*Purdue University, West Lafayette, Indiana, USA*

## INTRODUCTION

Playful handling, also known as “tickling”, is a technique used by humans to mimic rat rough-and-tumble play, improve welfare, and reduce fear of humans. Tickling elicits ultrasonic vocalizations from rats that are indicative of positive affect. Some rats consistently produce more vocalizations (high-callers) than others, indicating higher enjoyment, which may impact human-rat interactions. Anecdotal information suggests that humans enjoy tickling rats, particularly high-callers; yet this assertion has not been empirically validated. We hypothesized that tickling high-calling rats, compared to low-callers or controls, would improve (1) unfamiliar human-rat interactions and (2) employee affect after handling and sale.

## METHODS

We sampled 36 rats and 9 employees. After 3 days of tickling, we split rats into 3 groups: control (minimally handled), high-callers (tickled- most vocalizations) and low-callers (tickled- least vocalizations). After employees applied handling treatments for another 4 days, we assessed rats with an unfamiliar human restraint and approach test. We assessed employee affect using the Positive and Negative Affect Scale (PANAS) after handling treatments and rat sale. Analysis used General Linear Models (GLM) followed by Tukey’s multiple comparison test and contrasts to assess significant effects.

## RESULTS

High- and low-calling rats required fewer restraint attempts than controls (Tukey,  $p < 0.05$ ). During the approach test after restraint, low-calling rats took longer to make contact with the human than high-callers (Tukey,  $p < 0.05$ ). When applying handling treatments, employee negative affect decreased from day 1 to 4 ( $F(1, 15) = 6.39$ ,  $p = 0.02$ ). When selling rats, employee positive affect was higher when selling pets versus feeders ( $F(1, 11) = 7.5$ ,  $p = 0.02$ ) and decreased the longer the rat was in the store ( $F(1, 11) = 5.7$ ,  $p = 0.04$ ).

## CONCLUSIONS

Short-term tickling may improve some unfamiliar human-rat interactions for high-calling rats, but may not impact employee affect after handling or sale. Future studies should assess long-term employee affect to control for novelty, which may explain the initial decrease in negative affect found in this study. Studies should also develop efficient and effective tickling protocols that result in improved rat and human outcomes. Overall, our results suggest that tickling rats, especially high callers, in pet stores may improve human-rat interactions without harming employee affect.

# Measuring between visit effects of dog visits to nursing homes

**TIA HANSEN<sup>1</sup>**, Maria Castro Rojas<sup>1</sup>, Karen Thodberg<sup>2</sup>

[tia@hum.aau.dk](mailto:tia@hum.aau.dk)

1. Aalborg University, Aalborg, Denmark

2. Aarhus University, Aarhus, Denmark

Several studies have found dog visits to nursing homes beneficial to residents including those with dementia. While mood and behaviour effects of the dogs' presence have been observed during the visits, long-term effects are less clear (e.g., Filan & Robert H. Llewellyn-Jones, 2006; Thodberg et al, 2015, in press). However, in this population long-term positive effect may be undetectable due to declining mental health, and even transitory effects, i.e. positive impact on residents' life between dog visits, would be worthwhile.

The question is how can we measure these? Our narrative review examines available options and argues for a short staff reported index measure that is inspired by the Neuropsychiatric Inventory Nursing Home Version (NPI-NH; Cummings, 2009) with elements added that target pro-social behaviours and dog specific elements. The validity of this kind of measure can be tested, it is easy to use by staff, it can be applied across resident homes, and eventually it may assist staff in individual matching of residents to dog/handler visitors. Furthermore, it includes items for measuring effect of the dog visits' on staff's own well-being and job satisfaction (cf. Rosetti et al, 2008; Trembath, 2014).



# Puerto Rico economic crisis: migration, broken bonds and compassion stress

**YAHAIRA SEGARRA**

[ysegarra@albizu.edu](mailto:ysegarra@albizu.edu)

*Albizu University, San Juan, Puerto Rico*

Puerto Rico has an estimated population of 3.4 million, measures 110.5 x 40.3 mi., and is facing the worst fiscal crisis in its history. It is caused by a massive government debt, a prolonged economic downturn and a population decline (Harvard Law Review, 2015). One of the most significant social changes elicited by this downfall, has been the substantial migration of Puerto Ricans to the United States searching for job opportunities and quality of life. In 2014 alone, 84,000 people left the Island, and 3,000 leave the island monthly (American Community Survey, 2014). Very few who move to the U.S. take their companion animals with them. Puerto Rico, which was already facing problems with an estimate of more than 100,000 street animals, a 95% rate of euthanasia, in animal shelters, (Humane Society of the United States, 2015) and scarce and overloaded rescue groups, now faces one of its worst moments.

Although there are volunteer groups who work passionately for this cause, their efforts are not enough. Because of this, animal rescuers have a great burden, one that also can impact their mental health, making them prone to experience compassion stress. Figley (1995) stated that this is the stress resulting from helping or wanting to help a traumatized person. This also has been applied to the work with animals. Since in Puerto Rico, there aren't any published research, regarding this subject, this review intends to make visible how this crisis endangers companion animals in the Island, and can have a negative impact on those who struggle to remedy the ravages of the economy on them. A literature search was performed from EBSCOhost, and ProQuest databases. The search terms compassion stress/fatigue, secondary trauma and animal rescuers were used. An integrative review method was used to analyze the data. 12 articles were identified with this terms. Mainly the work on this subject is with veterinarians and their staff, little is done with animal rescuers. There is a need to thoroughly explore the negative impact that this group can have, and to understand and develop ways to prevent compassion stress for them.

# Veterinary medicine students trained using animal dummies simulators: attitudes and results

**CARMEN LUZ BARRIOS<sup>1</sup>**, Paola Torres<sup>1</sup>, Paula Calvo<sup>2</sup>

[pcalvoetologia@gmail.com](mailto:pcalvoetologia@gmail.com)

1. Universidad Mayor, Santiago, Chile

2. Universitat Autònoma de Barcelona, Barcelona, Spain

Veterinary schools try to find new methods to train their students in the most humane way. One of the strategies consists of using animal dummies simulators to train some invasive techniques, such as venepuncture. Hence, the aim of our study was to evaluate the attitudes and results of 4th grade veterinary students who had been trained using animal simulators for dogs and cats at the Universidad Mayor de Chile.

We prepared a 5 items questionnaire to explore veterinary students attitudes towards their training with animal simulators. Also, we evaluated their abilities to do intramuscular and intravenous injections through 15 items that were score pre-training and post-training with the animal simulators.

Forty-six 4th grade veterinary students at the Universidad Mayor the Chile participated in this study. First, students' scores of their capabilities after training with animal simulators were significantly better than their scores before training with them (Wilcoxon test;  $p=0.0001$ ). And when analysing the students' attitudes towards this kind of training methodology, they were mostly positive: 98% participants considered that training with animal simulators meant an important contribution to their general training, while only 9% thought that using animal simulators could compromise the quality of their training as veterinarians.

These results indicate that training with animal simulators can produce effective training in venipuncture for veterinary students. Moreover, veterinary students of this study showed high levels of acceptance of animal simulators. Hence, this is a first step to promote implementation of this kind of more humane training for veterinary students. Further research is necessary to check the efficiency of training more techniques with animal simulators.

# Horses for Heros: Equine Assisted Intervention to Support Post-Traumatic Growth in Military Veterans

**ALLISON BOYRER**, Cheryl Krause-Parello, Eleni Padden

[allison.boyrer@ucdenver.edu](mailto:allison.boyrer@ucdenver.edu)

*University of Colorado-College of Nursing, Aurora, CO, USA*

A multitude of studies examining the transition of service members from the military culture into civilian society have provided vital empirical information regarding the emotional challenges associated with this significant lifestyle change, and the pressing health care needs of those who have served. Literature review findings have revealed a critical gap in knowledge concerning both the psychological and physiological health effects of animal assisted intervention (AAI) upon the veteran population reintegrating into society. In particular, there is a dearth of knowledge on equine-assisted intervention (EAI) and its effects upon PTSD symptomology in military veterans. EAI has strong potential to be therapeutic for veterans during the transition from a military comradeship to a civilian community.

Recent literature posits that post-traumatic-growth (PTG) entails undergoing processes of significant psychological shifts in thinking and relating to the world subsequent to traumatic event(s), contributing to a renewed appreciation for life and psychological changes. EAI incorporates understanding the horse and their distinct personalities, attitudes, and moods. For a soldier troubled with recurring thoughts of war and trauma, having an animal near requires the focus to be shifted away from self and outward, towards the horse and their needs, allowing for a reorienting of prioritizations that may impact shifts in psychological and physiological outlook, thus promoting PTG.

Veterans reintegrating into civilian life often experience feelings of isolation and hopelessness. Horses perceive and react to the emotional state of the handler, whether positive or negative. This may aid veterans suffering from PTSD to recognize their own moods and attitudes and appreciate how they affect those around them. Additionally, interacting with this large and powerful animal may cultivate confidence, reduce fear, and serve as a metaphor for veterans to refer to when coping with intimidating and powerfully challenging situations in civilian life. Veterans may experience PTG-cultivating a greater appreciation for life, more intimate relationships with others, a reduction of fear, recognition of new possibilities for one's life path, and spiritual development using EAI. While more empirical data is needed to supplement anecdotal evidence, EAI is a promising treatment modality for PTSD, and should be further investigated.

# Can Non-Verbal Autistic Children and Donkeys be Equal Participants in Animal Assisted Interventions?

**MICHELLE WHITHAM JONES**

[mw524@exeter.ac.uk](mailto:mw524@exeter.ac.uk)

University Of Exeter, Devon, UK

## BACKGROUND

We have seen a rise in research investigating equine assisted interventions to relieve problematic traits in children with autism. Parents have been exposed to promises about the potential radical changes that such interventions achieves but the evidence for non-verbal autistic children has been sadly thin and such research usually assumes equines are a homogenous group without considering that their individual characters and emotional state could play a role in the encounter.

Often, autism research focuses on dis-ability rather than the autists' unique abilities which could provide an alternative lens into AAI. Autistic children can struggle with understanding the world of verbal communication yet it has been observed that some children with autism engage with equines for much longer and are calmer than with verbal humans. These encounters may enable a unique comfortable communication that could initiate emotional growth in other contexts for both species. One Animal welfare charity founded in the UK cares for 4,725 Donkeys all over Europe. The charity actively promotes welfare by ensuring that their donkeys are housed in social situations that promote enrichment with their own species. Some of these donkeys facilitate AAI, some are very good at engaging hard to reach children.

Children who are non-verbal and autistic are no more a homogenous group than donkeys, if one assumes that both groups have individual characters based on nature and nurture, then one must deduce that it is essential that both species are participants in any research. Would a child respond differently to an equine showing 'apathetic' or 'uncomfortable' behaviours, to the same equine showing 'curious' or responsive' behaviours (QBA Measures, 2) or vice versa, I suspect yes?

## METHODOLOGY

My project aims to denote a new era of multidisciplinary, interspecies research that includes the child and donkey as equal participants.

This is an AAI study that answers Birke's (1) question 'what's in it for the animals' by using a qualitative behaviour tool that factors the welfare and emotional state of donkeys, (2) and a multispecies ethnographic approach that encompasses the human representatives of both children and equines.  
 Human Participants: Non-verbal children with Autism who access Donkey Assisted Intervention  
 Equine Participants: A group of donkeys living in an animal welfare charity who facilitate Donkey Assisted Interactions in the UK

### RESEARCH QUESTIONS

This research aims to identify if the synthesis of encounter between donkeys and autistic children can:

- drive a new respect for equine-human sensibility
- provide a genuine enrichment experience for donkeys living in an animal welfare sanctuary
- show parents and families the unique potential of their autistic child, evidence of a capacity that could facilitate a better understanding of the child's perception?

1. Birke L. naming names-, Or what's in it for the animals? *Humanimalia*. Volume 1, Number 1  
-September 2009

2. MineroM, DallaCosta E, Dai F, Murray L A M, CanaliE, WemelsfelderF (2015) Use of Qualitative Behaviour Assessment as an indicator of welfare in donkeys. *Applied Animal Behaviour science* 174 (2016) 147-153

# Social constructions of the companion animal care: an approach from Anthrozoology

**MYRIAM ACERO**

[maceroa@unal.edu.co](mailto:maceroa@unal.edu.co)

*School of Veterinary Medicine. National University of Colombia, Bogotá, Colombia*

Caring for a dog or a cat is an increasingly common cultural practice in urban societies. This research seeks to answer the question: ¿why do people have companion animals?, with a view to understanding the link between care, animal welfare and public health. The objective was to describe and analyze the social constructs of animal care. For which it took as a basis the conceptual and methodological developments of Anthrozoology. The research corresponds to a part of the doctoral thesis in Public Health.

A qualitative ethnographic research was conducted. The work was done in Bogota (Colombia) and consisted of: a) observing practices and interview families who have dog or cat (12 families); b) observing practices and interview government entities responsible for public health programs (visit to the Zoonosis center of the city, support in collecting stray animals) and c) interpretative phase through categories. The categories used for analysis were: human-animal relationship, companion animal, animal care, animal welfare and public health. The field data were processed and analyzed using ATLAS-TI software.

The results suggest that the care of companion animals happens in a complex process of social relations thus: a) is a relational issue that is built into the daily interaction between humans and animals; b) is a life experience for the individual, the family and the animal that although it can be displayed in some trends, always be specific for those involved in it; c) shows ambiguity and contradiction: consider animals as family members, children, friends, brothers, cohabit with other demonstrative considerations of power, utility, subrogation, fetish, toy and disgust; d) shows the fragility and permeability of human-animal border. These considerations are not taken into account by public health that remains focused on the risk animals signify for society or by animal welfare that remains focused on the animal without understanding the complexity of the relationship with humans.

# Animal Assisted Intervention in geriatric patients with osteoarticular pain and poli-medication

**MAYLOS RODRIGO CLAVEROL**<sup>1,2</sup>, Carles Casanova Gonzalvo<sup>2</sup>, Belén Malla Clua<sup>1</sup>, Meritxell Solé Pujol<sup>2</sup>, Júlia Jové Naval<sup>1,2</sup>, Esther Rodrigo Claverol<sup>2</sup>

[demaylos@gmail.com](mailto:demaylos@gmail.com)

1. CAP Bordeta-Magraners (ICS), Lleida, Spain
2. Associació Ilerkan, Lleida, Spain

## BACKGROUND

Nowadays, there is a progressive aging of population. Chronic osteoarticular pain is associated to a bigger consumption of medication and a deterioration of life quality in elderly people that could be improved by boosting education for health from Primary Health Care.

## JUSTIFICATION

The need to develop non pharmacological treatments in order to get better results in people's global care.

## PURPOSE

To evaluate the effectivity of group intervention, based on Animal Assisted Therapy (AAT), on elderly people suffering from chronic osteoarticular pain and poli-medication; regarding decrease of chronic pain, use of analgesics and improvement of life quality.

## MATERIAL AND METHOD

Randomized clinical trial, two arms, controlled and open-label. Twelve group sessions of kinesiotherapy with the intervention of a therapy dog in the experimental group (EG), carried out in the Primary Health Centre. From October 2013 to June 2015. Inclusion criteria: age  $\geq 65$  years, chronic osteoarticular pain and take more than five drugs. Exclusion criteria: allergy or dog panic and cognitive impairment. Human resources: a nurse, a physiotherapist and a AAT technician. Dog Therapy: one Golden Retriever, male and 5 years old; two Cavalier King Charles, females with 2 and 3 years old. Variables control: Age, gender, withdrawals. Variables assessed before and after the program: Western Ontario and McMaster (WOMAC) Universities Osteoarthritis Index, Lattinen test and Health Assessment Questionnaire.

## RESULTS

Fifty-two participants (22 control group (CG), 30 EG), average age 77.50 ( $\pm 7.29$ ) years old, women 90.38%. Significant reduction of pain in EG, WOMAC- pain: CG: -2.64( $\pm 1.81$ ), EG: -4.17( $\pm 3.31$ )  $p=0.04$ . Health Assessment Questionnaire: CG: -0.4 ( $\pm 0.23$ ), EG: -0.35( $\pm 0.34$ )  $p=0.54$ . Significant cut in the use of analgesics in EG, LATTINEN-analgesics: CG: -0.05( $\pm 0.58$ )  $p=0.71$ , EG: -0.33 ( $\pm 0.66$ )  $p=0.01$ . Percentage of withdrawals: 33.5% CG, 14.3% EG  $p=0.08$ .

## CONCLUSIONS

AAT entails and additional and statistically significant decrease in pain perception and analgesic use. The presence of a dog increases the attachment to the intervention. The study contributes to giving scientific evidence to Animal Assisted Interventions.

# Animal Assisted Therapy: multidimensional approach for people with intellectual disabilities

MAYLOS RODRIGO CLAVEROL<sup>1,2</sup>, Josep Xavier Prunera Prunera<sup>2</sup>, Meritxell Solé Pujol<sup>1</sup>,  
Carles Casanova Gonzalvo<sup>1</sup>, Júlia Jové Naval<sup>1</sup>, Jèssica Bergadà Bell-Iloch<sup>1</sup>

[demaylos@gmail.com](mailto:demaylos@gmail.com)

1. *Associació Ilerkan, Lleida, Spain*
2. *Fundació ASPAMIS, Lleida, Spain*

## BACKGROUND

Animal Assisted Therapy (AAT) consists on the intervention of animals in therapeutics processes. The main goal of these interventions is foster the human health.

## PURPOSE

To determine the improvement in the overall development of people with intellectual disabilities (ID); in the field of psychomotricity, cognition, communication and the emotions.

## METHODS

A single group pre-post quasi-experimental design. The participants were selected from two centers for people with intellectual disabilities (ID). Therapy involved an intervention of one hour a week in each group for eight months. These sessions were coordinated with the healthcare professionals of the center (psychologists, physiotherapist and AAT technician) who participate in specific activities depending on the goals we want to achieve. Animal: Therapy dog (one three years old male Golden Retriever, one two years old female Cavalier King Charles). Variables assessed before and after the study: Age, gender, Tinetti test, Holden communication scale, Isaac test, Photos test.

## RESULTS

15 participants. Average age: men 51,12(±19,14)/ women 52,14(±9,32) years. Gender: 53,33% women. Differences between before and after the intervention: Tinetti 0,57 (±0,78) p =0,1; Isaac 5,50 (±3,93) p=0,019; Photos 2,83 (±2,40) p=0,034; Holden -6 (±7,12) p=0,094.

## CONCLUSIONS

A statistically significant improvement was determined by Isaac and Photo's tests which assess the cognitive level. In the Holden communicative scale the improvement tend to be significant: raising the communication and inter-group relationship. During the sessions, the motivation, the intentionality, happiness and the maintaining attention raise their levels. In our opinion the AAT fosters the improvement of the physical, social, cognitive and emotional functions of the people with intellectual disabilities. The Animal Assisted Interventions should be promoted to improve the quality of life in people at risk of social exclusion and the multidimensional care of the disabled people.



# Comprehensive care of the elderly institutionalized population by the Animal Assisted Therapy

MAYLOS RODRIGO CLAVEROL<sup>1,2</sup>, Meritxell Solé Pujol<sup>1</sup>, Silvia Hoyas Contreras<sup>2</sup>, Emma Torres Rey<sup>2</sup>, Jaume Serra Zaragoza<sup>2</sup>, Carles Casanova Gonzalvo<sup>1</sup>

[demaylos@gmail.com](mailto:demaylos@gmail.com)

1. *Associació Ilerkan, Lleida, Spain*

2. *Residència i Centre de Dia per a Gent Gran Lleida-Balàfia, Lleida, Spain*

## BACKGROUND

Animal Assisted Therapy (AAT) for the elderly population aims to promote health and emotional well-being through the interaction between the users and the animals.

## PURPOSE

To improve the quality of life of participants in the program stimulating their cognitive, physical and communicative capabilities through Animal Assisted Therapy.

## METHODS

A single group pre-post quasi-experimental design. Paired t-test was used to evaluate changes from baseline following an AAT. Elderly population institutionalized. An hour intervention for each group, with a total of 16 weekly group sessions, from September 2014 to April 2015. These sessions were coordinated with the healthcare professionals of the center (psychologists, physiotherapist and occupational therapist) and AAT technician. Animal: Therapy dog (one 5 years old female Golden Retriever). Variables assessed before and after the study: Age, gender, Tinetti test, Holden communication scale and Isaac's test.

## RESULTS

38 participants. Gender: 26 (68.4%) women, 12 (31.6%) men. Average age: 85.58 ( $\pm$  7.3) years. Cognitive Level: 20 (52.6%) GDS 1-3, 18 (47.4%) GDS, 4-6. Pre Isaac-test 22.53 ( $\pm$  11.72) / Post Isaac-test 21.84 ( $\pm$  11.62),  $p = 0.728$ ; Pre Holden 14.68 ( $\pm$  10.41) / Post Holden 15.11 ( $\pm$  10.65),  $p = 0.024$ ; Pre Tinetti 20.74 ( $\pm$  8.91) / Post Tinetti 20.34 ( $\pm$  8.82),  $p=0.889$ .

## CONCLUSIONS

The elderly population is fragile and the natural evolution of the dementia tends to a physical and mental progressive deterioration. The results of the study show no significant differences between before and after the intervention neither to cognitive nor physical level. As a result, the TAA managed to support the cognitive and physical skills of the participants. An improvement was observed in the communication Holden Scale, which was attributed to the presence of the dog who stimulated the communication levels and enhanced social relationships. Clinical practice guidelines advise perform cognitive stimulation in order to maintain capacity and slow the deterioration of people with dementia; and AAT can be helpful.

# When natural disasters strike: The spillover effect of a flood on pet-friendly rental housing

**TARYN M. GRAHAM, Melanie J. Rock**

[grahamtm@ucalgary.ca](mailto:grahamtm@ucalgary.ca)

*University of Calgary, Calgary, Alberta, Canada*

When Calgary, Alberta was hit by a flood in the summer of 2013, the city had the lowest vacancy rate throughout Canada (Statistics Canada, 2014). As a result, households were already experiencing difficulty finding a place to rent. From 2013-2014, the Calgary Humane Society witnessed a 31% increase in animals surrendered due to lack of pet-friendly housing. Pets abandoned in rental properties also rose (Klingbeil, 2014).

This research project examines the extent to which Calgary's rental market accommodates pet ownership, and under what terms, as a determinant of health and influence on inequity. Eight months after the flood, online apartment and condominium rental listings were systematically collected and content was analyzed for explicit statements about pets by landlords in their "offering" ads (n=135) and by aspiring tenants through their "wanted" ads (n=167). Listing ID, date of posting, location, price, and unit characteristics were tabulated. For "offering" ads, landlord type and pet-related restrictions or surcharges were documented, whereas for "wanted" ads, emphasis was placed on how responsibility was defined and coordinated through pets, as a condition for accessing housing.

Demand for pet-friendly accommodation in Calgary outweighed supply. Even when properties were listed as pet-friendly, 42% of landlords stipulated that only pets of certain sizes, species, or breeds were permitted. Dogs, in particular, were frequently banned from rental housing. In addition, 24% of landlords required pet owners to pay higher damage deposits or non-refundable fees ranging anywhere from \$200 to \$300 per pet.

Relinquishing or abandoning a pet in order to secure housing could negatively impact resilience in the aftermath of a natural disaster. Average monthly rent was elevated to the point of being financially out of reach for many pet owners, while surcharges added additional monetary constraints. Findings from this study have relevance for both human and animal welfare.

# The animal-related educational practices and activities for children/young people who have entered the youth justice system in the UK

**DIAHANN GALLARD**

[d.c.gallard@ljmu.ac.uk](mailto:d.c.gallard@ljmu.ac.uk)

*Liverpool John Moores University, Liverpool, UK*

As part of a wider investigation into the educational practices and activities for children/young people who have entered the youth justice system, research was conducted about animal-related programmes for children 'locked up' in secure settings in the UK.

This poster details findings relevant to the anthrozoological field - a review of activities that are 'animal-related' occurring in the secure setting context facilitated by educators for children aged 10-19 years. The project built upon previous work by Mercer, Gibson and Clayton (2015) about the growing animals-related programmes in adult prisons, and this research looked specifically at; a) the animal-related practices currently occurring, b) the models of practice used, alongside the pedagogies and views of educators in secure settings.

The study used mixed methods including a systematic review of policy documents and statutory guidance materials and a qualitative, ethnographic approach looking at the perspectives of educators in five different settings who plan and oversee educational provision for children who are 'locked up'. Some of the key findings were; historically, there have been difficulties in adequately meeting the needs of children/young people in secure settings and, although animal-related programmes in adult prisons are growing and studies are being conducted regularly, this is not mirrored in the context of youth justice settings for children.

Educators in secure settings in the UK do not make distinctions between educational and therapeutic approaches, integration of therapeutic animals is rare and educators do not actively seek to integrate animals-related activities. The educators interviewed had particular concerns about integrating animals due to a high proportion of children in the setting having a history of animal abuse. Where educators had previously displayed interest in animal-related programmes there were two distinct responses; in some cases the health and social care professionals they worked alongside were concerned about the potential for harm for animals, whereas in other cases they saw potential for addressing a high prevalence of attachment disorders, therefore mixed messages were prevalent.

The core findings of the study suggest that, although multi-agency working for children requiring rehabilitative approaches is being strengthened in secure settings, joined up thinking about animal-assisted activities needs improvement.

# Attitudes towards halal and animal welfare in Australia and Malaysia

**NUR SYAZWANI ABDUL JALIL<sup>1</sup>, Amanda Tawde<sup>1</sup>, Sarah Zito<sup>1</sup>, Michelle Sinclair<sup>1</sup>, Zulkifli Idrus<sup>2</sup>, Clive Phillips<sup>1</sup>**

[s.zito@uq.edu.au](mailto:s.zito@uq.edu.au)

1. *University of Queensland School of Veterinary Science, Queensland, Australia*

2. *Universiti Putra Malaysia, Kuala Lumpur, Malaysia*

Muslims are required to consume only Halal food and specific regulations must be met in order for a meat product to be considered Halal. Knowledge of and attitudes towards Halal may differ widely between cultures or people within cultures. Despite this, differences have not been explored or the underlying reasons investigated, even though this information could be used to inform policy, education and animal welfare initiatives.

A survey was conducted by a team of interviewers with 565 respondents in Brisbane and surrounding regions, Australia and 740 in Kuala Lumpur and surrounding regions, Malaysia to investigate attitudes and beliefs about Halal. Religion and education were the demographic factors most commonly associated with attitudes, beliefs and consumer habits concerning Halal (all  $p < 0.05$ ). Religion was associated how with acceptance of slaughtering animals that are conscious (not stunned) for religious reasons. The most common reasons respondents gave for preferentially avoiding halal food were animal welfare concerns, religious reasons and concerns about meat quality. Agreement that animal welfare during slaughter should be controlled by law was associated with a greater belief that paying more money for animal products with high welfare standards is reasonable. Increasing income was also associated with this. Compared to respondents who did not have Muslim friends, those that did were less likely to avoid Halal food. Increased agreement that slaughtering animals that are conscious for religious reasons is acceptable was associated with an increased belief that Halal food is acceptable (all  $p < 0.05$ ). Information from this study will help improve understanding of attitudes to Halal and inform policies to address concerns. In addition, the results can be used to direct education initiatives about Islam and Halal.

# The attitude of human-health professionals towards interactions between pets and children or pregnant women

EVA QUIÑONES<sup>1</sup>, María Luisa Meléndez<sup>1</sup>, Paula Calvo<sup>1,2</sup>, Jonathan Bowen<sup>1,3</sup>, Antoni Bulbena<sup>1,2</sup>,  
Jaume Fatjó<sup>1,2</sup>

[evaqui76@gmail.com](mailto:evaqui76@gmail.com)

1. Chair Affinity Foundation Animals and Health, Universitat Autònoma de Barcelona, Barcelona, Catalonia, Spain
2. IMIM (Hospital del Mar Medical Research Institute), Barcelona, Catalonia, Spain
3. Royal Veterinary College, North Mymms, Hertfordshire, UK

## INTRODUCTION

Although pet-ownership is generally regarded to be positive for human health, the negative attitudes of individual human-health professionals toward interactions between patients and their pets are likely to influence pet ownership. We investigated the perceptions of Spanish human-health professionals in these situations, with two particularly important groups; children and pregnant women.

## METHODS

An online 9-item questionnaire was constructed, which included questions about professional-specialty and career, attitudes towards animals, and attitudes towards interactions between pets (cats & dogs) and children or pregnant women. The survey was submitted by email to paediatricians, nurse-midwives, paediatric-nurses, and gynaecologists through their national associations.

## RESULTS

The online survey was completed by 113 health-professionals, mainly paediatricians (77%) and nurse-midwives (24%). Most of the respondents were women (81%), older than 40-years-old (58%), and with more than 6 years of professional activity (77%). The mean-score for personal liking of pets was 8.4 for dogs and 7.5 for cats (on a 1-10 scale); 32% of respondents owned dogs and 11% owned cats. However, 25% of respondents were negative toward child-dog interaction, 50% were negative toward child-cat interaction, 31% were negative toward dog-pregnant woman interaction, and 59% were negative toward cat-pregnant women interaction. Perceived risks of interaction were mainly attributed to parasitism, with 45% of respondents rating the risk of parasitism as 5 or above (on a 1-10 scale). Interactions between cats and pregnant-women were perceived worst by professionals. Owning a pet positively influenced attitudes towards child-dog and pregnant woman-dog interactions. No effect was found regarding interactions with cats.

## CONCLUSION

These results suggest that negative attitudes toward interactions between pets and children or pregnant women may be common in the health-professional groups that deal with such patients. This is at odds with the stated policies of human-health-professional bodies, which generally support pet keeping as beneficial. Cats appear to be more stigmatised than dogs, possibly because they are regarded as a more serious source of parasitism. Although further research is needed, these results demonstrate a potential need for educational campaigns to convince healthcare professional of the benefits, and low risks, of pet-human interactions.

# Motivations and attitudes for companion animal acquisition in Catalonia

**ROSARIO CARRO<sup>1,4</sup>, Paula Calvo<sup>1,2</sup>, Jonathan Bowen<sup>1,3</sup>, Antoni Bulbena<sup>1,2</sup>, Jaume Fatjó<sup>1,2</sup>**

[r.carro@liberaong.org](mailto:r.carro@liberaong.org)

1. Chair Affinity Foundation Animals and Health, Universitat Autònoma de Barcelona, Barcelona, Catalonia, Spain
2. IMIM (Hospital del Mar Medical Research Institute), Barcelona, Catalonia, Spain
3. Royal Veterinary College, North Mymms, Hertfordshire, UK
4. Asociación Animalista Libera, Barcelona, Catalonia, Spain

## INTRODUCTION

Pet abandonment is a serious welfare problem that can reach a level that overwhelms shelter-services, as is in the case in Catalonia. The promotion of pet adoption is a popular strategy to tackle abandonment, but public policy should be evidence-based and there is a lack of information about public attitudes towards the different forms of pet-acquisition, including adoption. We explored the attitudes of Catalans towards different routes of pet-acquisition and the effect on outcome.

## METHODS

An online survey was created to profile respondents' most recent experience of pet acquisition, including origin, duration of ownership, level of satisfaction and rated importance of various aspects of the acquisition process (cost, proximity, quality, animal's health and welfare, options to choose, etc.). Respondents were then asked about their preferences for their next pet acquisition. Recruitment was through the social networks of 36 participating companion animal business sites (pet-shops, pet-breeders, dog-hotels, and veterinary clinics).

## RESULTS

We collected 372 complete questionnaires. Participants were mostly highly educated (61% university education), young (59% between 26 and 39 years old) and female (92%). With respect to their most recent pet acquisition, 26% of animals had been purchased (12% from an official breeder, 5% from a pet shop, 6% home bred, and 3% online) and 41% had been adopted. Across all routes of acquisition, certain aspects rated as important by most participants (over 70%); animal health, animal welfare conditions and reputation of the source. Shops were scored significantly lower in terms of animal welfare than other sources of acquisition. When asked about their next pet, 82.4% would adopt from a shelter, versus only 10.9% that would purchase. This pattern differed significantly from the source of the owner's most recent acquisition.

## CONCLUSIONS

These results indicate that adoption has become an accepted, and even favoured, source for pet acquisition in Catalonia, with pet-adopters being more satisfied about the acquisition process than pet-purchasers. The further promotion of shelter adoption would seem to be a rational application of resources to tackle the impact of abandonment.

# Assessment of an animal-related university stress relief program

**MEGAN MUELLER**<sup>1</sup>, Megan Barrett<sup>2</sup>, Caroline Cohn<sup>2</sup>, Rose Anne Lajara<sup>2</sup>, Jaye McLaren<sup>2</sup>, Jennifer Schmitt<sup>2</sup>, Deborah Linder<sup>1</sup>, Lisa Freeman<sup>1</sup>

[megan.mueller@tufts.edu](mailto:megan.mueller@tufts.edu)

1. Tufts University, Cummings School of Veterinary Medicine, North Grafton, MA, USA
2. Tufts University, Medford, MA, USA

The popularity of animal-assisted stress relief programs in university settings is growing in popularity across the United States (Crossman & Kazdin, 2015). As institutions of higher education work to develop innovative and creative approaches to addressing mental health concerns in college students, the use of animal visitation programs have increased in prevalence on college campuses. Previous research supports the link between animal-assisted interventions and the reduction of stress in a variety of populations, including those experiencing post-traumatic stress disorder, depression, and anxiety. However, there has been relatively little research exploring the effectiveness of animal-assisted stress relief programs for college students.

Data were collected from a convenience sample of students who participated in an animal-assisted stress relief program hosted in the university library during the final examination period ( $n = 210$ ). Students were asked to report their stress levels (on a scale from 1 to 5) prior to and after visiting with the animals, as well as the duration of time they spent with the animals. Participants were primarily undergraduate students (81%), with the remainder graduate students.

Results from a paired samples t-test indicated that students reported significantly lower stress levels after visiting with the animals ( $M=2.01$ ,  $SD=.88$ ) compared to their stress levels before interacting with the animals ( $M=3.28$ ,  $SD=.97$ );  $t(205)=21.53$ ,  $p<.001$ . In addition, change in stress was positively correlated with the amount of time students spent with the animals,  $r=.30$ ,  $p<.001$ . Students who were dog owners did not experience significantly different reduction in stress compared to non-dog owners  $t(174)=1.58$ ,  $p=.12$ .

The results from this pilot study add to the emerging literature supporting the viability of carefully designed animal-assisted programs as a creative approach to promoting mental health in college students. There is a need for further research exploring implementation of animal-assisted programs in the college setting in order to inform evidence-based practice.

# The therapy dog as an emotional support in a nursing home

MAYLOS RODRIGO CLAVEROL<sup>1</sup>, Laura Reullí Morancho<sup>2</sup>, Meritxell Solé Pujol<sup>1</sup>, Carles Casanova Gonzalvo<sup>1</sup>, Júlia Jové Naval<sup>1</sup>

[demaylos@gmail.com](mailto:demaylos@gmail.com)

1. Associació Ilerkan, Lleida, Spain
2. Sanitas Residencial Ilerda, Lleida, Spain

The relationships between caregivers and residents (elderly people) are affected by behavioural disorders which are caused by progressive cognitive impairment.

## OBJECTIVE

To improve the state of mind/mood in order to optimize occupational therapy sessions. To increase the motivation and the involvement in group activities. To assess the state of mind after the therapy.

## METHODOLOGY

Prospective descriptive study. Population: Nursing home residents affected by progressive cognitive impairment and behavioural disorders. Four weekly sessions of animal assisted therapy (AAT), divided into 3 groups of 8-9 people and 60 minutes of duration. The study took place between October 2012 and February 2013. Animal: therapy dog (golden retriever, male and 4 years old). Variables: Age, Gender, group, FAST Scale, Ilerda Scale (inspection before, during and after the session: smile pre-AAT, smile during AAT session, smile post-AAT, participate pre-AAT, participate during AAT, participate post-AAT).

## RESULTS

Group size: 25 participants. Average age: 85.4 (Standard deviation  $SD \pm 6.21$ ). Gender: 18 (72%) female. Group A= 9 (36%) residents; B=7 (28%); C=9 (36%). FAST Scale: FAST 2: 1 (4%) participant; FAST 3: 1 (4%) participant; FAST 4: 3 (12%) participants; FAST 5: 3 (12%) participants; FAST 6: 16 (64%) participants; FAST 7: 1 (4%) participant. Ilerda Scale: Total sample: Smile pre-AATsession1: 1.52( $\pm 0.58$ ) Smile duringAAT1: 2.4( $\pm 0.57$ ), Smile postAAT1: 2.12( $\pm 0.83$ ); Smile-pre-session2: 1.48( $\pm 0.65$ ), Smile-duringAAT2: 2.44( $\pm 0.58$ ) Smile-postAAT2: 2.24( $\pm 0.59$ ); Smile-pre-session3: 1.46( $\pm 0.58$ ), Smile-duringAAT3: 2.60( $\pm 0.57$ ), Smile-post3: 2.24( $\pm 0.59$ ); Smile-pre-session4: 1.80( $\pm 0.76$ ), Smile-duringAAT4: 2.76( $\pm 0.52$ ), Smile-postAAT4: 2.40( $\pm 0.64$ ); Participate-preAAT-session1: 2.00( $\pm 0.70$ ), Participate-duringAAT1: 2.40( $\pm 0.76$ ), Participate-postAAT1: 2.44( $\pm 0.71$ ); Participate-pre-session2: 1.96( $\pm 0.61$ ), Participate-duringAAT2: 2.40( $\pm 0.76$ ), Participate-postAAT2: 2.60( $\pm 0.57$ ); Participate-pre-session3: 2.28( $\pm 0.73$ ), Participate-duringAAT3: 2.68( $\pm 0.55$ ), Participate-postAAT3: 2.44( $\pm 0.58$ ); Participate-pre-session4: 2.24( $\pm 0.77$ ), Participate-duringAAT4: 2.46( $\pm 0.43$ ). Participate-postAAT4: 2.64( $\pm 0.48$ ).

## CONCLUSIONS

The residents with progressive cognitive impairments may have a higher level of behavioural and psychological disorders that must be addressed. An improvement in the state of mood as well as the level of involvement was observed. There was a statistically significant improvement in the mood of the residents during the AAT sessions. AAT helps to improve behavioural disorders amongst elderly population with dementia and offers beneficial effects.



# Dog Attachment and Perceived Social Support in Overweight/Obese and Healthy Weight Children

**DEBORAH LINDER<sup>1</sup>**, Lisa Freeman<sup>1</sup>, Jennifer Sacheck<sup>2</sup>, Farzad Noubary<sup>3</sup>

[deborah.linder@tufts.edu](mailto:deborah.linder@tufts.edu)

1. Cummings School of Veterinary Medicine, Tufts University, North Grafton, MA, USA
2. Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy, Tufts University, Boston, MA, USA
3. Tufts Clinical and Translational Science Institute, Boston, MA, USA

## BACKGROUND

The development of effective and sustainable interventions to treat childhood obesity remains both a priority and a challenge. Previous studies show dogs may provide social support in overweight adults in obesity interventions, but the child-dog relationship is not as well understood.

## OBJECTIVE

The goal of the study is examine the child-dog relationship among children to inform childhood obesity interventions including dogs.

## METHODOLOGY

A cross-sectional study was conducted in Living Laboratory® at the Museum of Science, Boston. Children aged 8-13 with a dog in the household answered surveys on pet attachment (Pet Relationship Scale), perceived social support from parents and close friends (Child and Adolescent Social Support Scale), and had a height and weight measurement taken for calculation of weight status.

## RESULTS

Overweight and obese children ( $\geq$  85th body mass index percentile; n=44) had greater mean attachment to their dog ( $73.1 \pm 5.6$ ) and less mean perceived social support ( $110.5 \pm 13.5$ ) from both their parents and friends compared to healthy weight children ( $68.6 \pm 7.1$ ,  $p=0.039$ ;  $122.7 \pm 14.6$ ,  $p=0.016$ , respectively).

## CONCLUSIONS

Children who are overweight/obese report greater mean dog attachment and lower mean perceived social support, supporting the concept that pet dogs are considered part of overweight/obese children's social support networks. Future studies are warranted to evaluate the impact of including pet dogs as additional mental health support in novel child obesity interventions.

# Coping with animal utility – empathy in the lab

**ELISABETH TJÄRNSTRÖM**, Helena Röcklinsberg, Elin Weber

[elisabeth.tjarnstrom@slu.se](mailto:elisabeth.tjarnstrom@slu.se)

*Swedish University of Agricultural Sciences, Uppsala, Sweden*

Humans use other animals for a variety of purposes. Often strive for resource or time efficiency (utility) clashes with understanding and consideration of the animals' needs (empathy). This can lead to distress for the animals as well as for humans. Among e.g. veterinarians, animal shelter workers and within animal research settings, the concept of "moral stress" has been studied. It can be described as the gap between what you want to do and what you can/are allowed to do, or between what you are expected to do and don't want to do (according to own moral considerations).

In order to better understand our often conflicted relationships with other animals, we wish to investigate the relationship between utility and empathy as two key concepts, and the potential clashes and synergies that are likely manifested in all animal use. This is a mainly theoretical study but that is also supplemented with semi-structured interviews with 5 laboratory animal technicians and 5 researchers working with animal research.

Previous research has found that focus on utility and utilitarian ethics are correlated with lower emotional attachment and identification, i.e. important aspects of empathy. Further, people who use animals commercially, e.g. for food production or for research, often find it necessary to distance themselves from the animals in order to not get too emotionally involved or feel too much empathy with the animals. Hence there is a perceived conflict between a general affinity to care for animals and focus on their function in human use. In addition, different coping mechanisms to deal with moral stress in a research setting have been found, e.g. ways of de-individualize animals through numeric names, a lack of direct contact with the animals or animal caretakers that would sometimes single out an animal for a pet.

Preliminary results from a pilot study confirm the experience of moral stress in laboratory technicians, and thus a perceived difficulty to combine utility (in relation to e.g. research practices) and empathy for the animals used. Further results (from an ongoing study) will be used for an ethical analysis of the relation between these concepts.

# Effect of visitor presence on the behaviour of zoo-housed Japanese macaques (*Macaca fuscata*)

EMILY ANDERSON<sup>1</sup>, Robert Weladji<sup>1</sup>, Patrick Paré<sup>2</sup>

[emily.june.anderson@gmail.com](mailto:emily.june.anderson@gmail.com)

1. Concordia University, Montreal, Quebec, Canada

2. Zoo de Granby, Granby, Quebec, Canada

The near constant presence of large numbers of humans is one of the main factors that set the zoo environment apart from the field and laboratory. Classic studies on the subject of human-animal interaction in zoos often used only visitor number as a predictor variable but researchers are now realizing that visitor effect is a multifaceted concept. Though studies on the effect of human presence on zoo animals are relatively common, they tend to focus primarily on the most popular and charismatic specimens, such as the great apes.

For this study, we examined the effects of three visitor-related variables (sound level around the enclosure, daily zoo attendance and crowd size around the enclosure) on the behaviour of adult Japanese macaques housed in two different enclosures at the Zoo de Granby, Granby, Quebec. Data was collected through focal animal sampling in summer and fall 2014/2015, and the relationship between the behavioural categories of interest and the visitor variables were analyzed using generalized linear mixed models.

All three visitor variables correlated with one or more behaviour categories in at least one of the groups of macaques. However, trends varied between groups in the same enclosure and between the two enclosures. Even within the same group, one behaviour category was often affected differently by each of the three visitor variables. As was the case with agonistic behaviours in group one, which decreased with sound level ( $-0.1023 \pm 0.02866$ ;  $F=12.75$ ,  $df=1,467$ ,  $p>0.001$ ) and increased with daily attendance ( $0.000087 \pm 0.000044$ ;  $F=4.01$ ,  $df=1,467$ ,  $p=0.046$ ). Though it appears that the presence of visitors does impact the behaviour of the Japanese macaques at the Zoo de Granby, the impact did not necessarily result in a decrease or an increase in welfare based on the behavioural indicators measured. It is clear that visitor presence does not necessarily act in a similar way on all groups, even those of the same species. As all three visitor-related variables contributed to predicting behaviour, this study supports the consideration and use of multiple measures when exploring this complex phenomenon.

# My friend from the primary healthcare center: the therapy dog

**MAYLOS RODRIGO CLAVEROL**<sup>1,2</sup>, Belén Malla Clua<sup>1</sup>, Meritxell Solé Pujol<sup>2</sup>, Júlia Jové Naval<sup>1,2</sup>, Carles Casanova Gonzalvo<sup>2</sup>, Jèssica Bergadà Bell-Iloc<sup>2</sup>

[demaylos@gmail.com](mailto:demaylos@gmail.com)

1. CAP Bordeta-Magraners (ICS), Lleida, Spain

2. Associació Ilerkan, Lleida, Spain

## BACKGROUND

Studies in the educational environment demonstrate that animals can keep and hold children's attention. It seems that the calming effects of animals are especially valuable in children with attention deficit, hyperactivity and disruptive behavioral disorders.

## PURPOSE

To improve attentional and concentration levels. To improve self-control and relaxation. To encourage cheerful mood. To respect their turn to speak during the activity.

## METHODS

A single group pre-post quasi-experimental design. Community intervention, Primary Health Care Center. Participants: Students of a special education school area. Inclusion Criteria: Children with intellectual disabilities, attention deficit and/or hyperactivity. Parental consent was requested and granted. Animals: two therapy dogs (one 4 years old male Golden Retriever; one 2 years old female Cavalier King Charles). Intervention: 12 group sessions (6 children/group), one weekly session from November 2012 to February 2013. Location: school facilities. Professionals: nurse, AAT technician health center and teachers of special education school. Variables: age, gender, Continue Rating Scale (CRS) that evaluates the gradation from 0 to 3 (0=never, 3=many times): attention, joy, relaxation and respect their turn to speak (it is evaluated at the end of the session).

## RESULTS

12 children participants. Average age: 12,66(DS ± 4,3). Gender: 50% of men. CRS: Session 1: Attention (0=58%, 1=33,3%, 2=8,3%, 3=0%), Joy (0=25%, 1=50%, 2=25%, 3=0%), relaxation (0=8,3%, 1=58,3%, 2=25%, 3=8,3%), respect turn to speak (0=100%); Sessió12: Attention (0=0%, 1=25%, 2=25%, 3=50%), Joy (0=0%, 1=16,7%, 2=25%, 3=58,3%), Relaxation (0=0%, 1=0%, 2=33,3%, 3=66,7%), respect turn to speak (0=0%, 1=0%, 2=16,7%, 3=83,3%).

## CONCLUSIONS

Throughout the sessions we improved children's attention and concentration. Attention, concentration, self-esteem and joy are difficult aspects to evaluate. The ability to stay focus and an optimum level of attention are essential for learning; animals are the centre of attention and both, the child and the therapist can be brought together through the animal. The quality of special needs children's life can be improved through AAT and community interventions.

# Exploration of zoophilia in connection with SAD, BPD, emotional competence and self-esteem on the basis of a clinical online-study

**BIRGIT U. STETINA**, Lisa Klamert

[birgit.u.stetina@sfu.ac.at](mailto:birgit.u.stetina@sfu.ac.at)

*Faculty of Psychology, Sigmund Freud University, Vienna*

This study aims to shed light on the highly controversial and unexplored topic of zoophilia by examining its connection to mental disorders, as well as self-esteem and emotional competencies.

The first research question concerns a possible connection of zoophilia and borderline personality disorder, which is characterized by highly unstable interpersonal relationships, high risk sexual behavior, fear of imagined or actual abandonment and strong impulsivity (Leichsenring et al., 2011). A simultaneous manifestation of zoophilia and other impulse control disorders also suggests a comorbidity of paraphiliae and difficulties in impulse control (Raina et al, 2012). Another research question explores the connection between social anxiety disorder and zoophilic behaviour, as paraphiliae are connected to, as well as able to trigger clinical relevant stress situations in social and/or professional life (McManus et al., 2013). The last research question addresses a potential relationship between zoophilic behaviour and empathy (serving as the representative parameter for emotional competence) as well as self-esteem, as emotional competence and self-esteem are said to be linked to socially accepted behaviour, sexual risk behaviour and sexual permissiveness (Ethier et al., 2006; Petermann & Wiedebusch, 2008; Walsh, 1991), a hypothesis supported by evidence showing a connection between lack of popularity and sexual interest in animals (Williams & Weinberg, 2003). The study's sample, recruited via corresponding online-platforms, will be organized and classified according to Aggrawal's (2011) categories of zoophilia.

Volunteers will be asked to complete an online-survey consisting of a number of carefully selected instruments, such as the Social Interaction Anxiety Scale, Social Phobia Inventory, Interpersonal Reactivity Index, Borderline Symptom List and Rosenberg Scale. Results are expected to show a connection between classification of zoophilic behavior according to Aggrawal's categories and the data collected via online-surveys. Instrument scores will be statistically processed and used for exploratory data analysis, comparison of means and calculation of effect size. Additional points of interest include the influence of language, sex, preferred animals and preferred sexual practice. First findings show a middle aged, averaging at about 33 years of age, and predominantly male sample with an academic background. The first findings point to potential deficiencies regarding Aggrawal's classification.

Aggrawal, A. (2011). A new classification of zoophilia. *Journal of Forensic and Legal Medicine*, 18(2), 73–78.

Ethier, K. A., Kershaw, T. S., Lewis, J. B., Milan, S., Niccolai, L. M., & Ickovics, J. R. (2006). Self-esteem, emotional distress and sexual behavior among adolescent females: Inter-relationships and temporal effects. *Journal of Adolescent Health*, 38(3), 268–274.

Leichsenring, F., Leibing, E., Kruse, J., New, A. S., & Leweke, F. (2011). Borderline personality disorder. *The Lancet*, 377(9759), 74–84.

McManus, M. A., Hargreaves, P., Alison, L. J., & Rainbow, L. (2013). Paraphilias: definition, diagnosis and treatment. *F1000Prime Reports*, 5.

Petermann, F., & Wiedebusch, S. (2008). *Emotionale Kompetenz bei Kindern [Emotional competency in children]*. Wien: Hogrefe Verlag.

Raina, G., Cersosimo, M. G., & Micheli, F. (2012). Zoophilia and impulse control disorder in a patient with Parkinson disease. *Journal of Neurology*, 259(5), 969–970.

Walsh, A. (1991). Self-esteem and sexual behavior: Exploring gender differences. *Sex Roles*, 25(7), 441–450.

Williams, C. J., & Weinberg, M. S. (2003). Zoophilia in Men: A Study of Sexual Interest in Animals. *Archives of Sexual Behavior*, 32(6), 523–535.

# Dog pups are most attractive to humans at weaning age

**CLIVE WYNNE<sup>2</sup>, Nadine Chersini<sup>1</sup>, Nathan Hall<sup>2</sup>**

[clivewynne@gmail.com](mailto:clivewynne@gmail.com)

1. *Utrecht University, Utrecht, The Netherlands*

2. *Arizona State University, Tempe, AZ, USA*

The domestic dog (*Canis lupus familiaris*) is characterized by greatly reduced parenting investment compared to the wild type wolf (*C. l. lupus*) from which it is descended. Unlike wolf pups, which are reared by both parents into their second year of life, dog pups are abandoned by their mother at weaning around eight weeks of age. This relatively small parental involvement may contribute to the high infant mortality observed in dogs not living as pets. According to Konrad Lorenz's Kindchenschema hypothesis, humans are attracted to the young of many species that display facial proportions similar to human infants. We hypothesized that people would find dog pups most attractive around weaning age.

Fifty one human participants rated the attractiveness of 39 photographs of dog pups from three breeds (Jack Russell Terrier, Cane Corso, and White Shepherd) ranging in age from shortly after birth to 7 months old.

Attractiveness of each breed peaked around six to eight weeks of age (linear mixed effects model Wald  $\chi^2 = 137.24$ , d.f. = 2,  $p < .001$ ), in line with our hypothesis.

If this attractiveness motivates humans to care for the dog pups and thereby improves pup survival, this could be a mechanism for parasitism of people by dogs. If there are advantages to humans of dog proximity, this could be a mechanism for a mutualism.

# The use of therapy dogs in conjunction with applied behavior analysis-based educational programs for children with intellectual and developmental disabilities

**ALEXANDRA PROTOPOPOVA**, Jeanne Donaldson, Katie Wiskow, Ashley Matter, Breanna Harris

[a.protopopova@ttu.edu](mailto:a.protopopova@ttu.edu)

Texas Tech University, Lubbock, Texas, USA

Despite the growing literature and interest in the use of therapy dogs in educational programs with children with Intellectual and Developmental Disabilities (IDD), currently, best practice for integrating therapy dogs with educational programming has not yet been determined.

The aim of the project was to determine the benefit of access to a therapy dog as a reinforcer for educational task completion in children and to develop a screening assessment to predict this benefit. In Experiment 1, we conducted a preference assessment, in which various inanimate leisure items as well as a therapy dog were included in the stimulus array. In Experiment 2, in a single-subject multi-element experimental design, we determined the efficacy of a therapy dog in improving task-related behavior as well as mitigate associated stress. Each child ( $n = 5$ ) was exposed to four conditions: contingent access to a therapy dog (CD), non-contingent access to a therapy dog (ND), contingent access to an inanimate preferred leisure activity (CL), and contingent praise (P). The motivation to engage in the educational activity as well as behavioral and physiological markers of stress were assessed in all conditions.

Data collection is still ongoing, but preliminary data found that overall, responding was different across conditions ( $n = 4$ ,  $\chi^2 = 7.97$ ,  $p = .03$ ). Contingent access to the dog (CD) resulted in higher academic responding compared to non-contingent access (ND) and verbal praise (P). Furthermore, we found that the reinforcing efficacy of the therapy dog may be more robust than typically-used inanimate reinforcers. In some participants, responding during the CL condition decreased across time, but was stable or even increased in the CD condition. By determining the best method of integrating established ABA-based educational programs with emerging therapy dog programs, the study advances research in special education programs in children with IDD.



## THANKS TO

### Sponsors



### Collaborators



### TECHNICAL SECRETARIAT

A/A Maria Torrens  
C/ Teodora Lamadrid, 52, Esc E – Entl 2<sup>a</sup>, 08022 Barcelona  
+34 699 857 469 – mtorrens@clinic.ub.es  
[www.meetingpharmagroup.com](http://www.meetingpharmagroup.com)