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Attitude to Animals and Empathy: Comparing Animal Protection and General Community Samples

Tania D. Signal and Nicola Taylor

School of Psychology & Sociology, Central Queensland University, Australia

Address for correspondence:
Dr. Tania Signal,
School of Psychology &
Sociology, Central
Queensland University,
Rockhampton, Queensland
4702, Australia.
E-mail: t.signal@cqu.edu.au

ABSTRACT Although a number of studies have examined a range of demographic and personality variables that may impact upon attitudes towards the treatment of non-human species, little consensus has been reached within the literature. The aim of the current study was to evaluate and assess levels of human-directed empathy and attitudes towards the treatment of animals in two diverse populations, namely the general community ($n = 543$) and those within the animal protection field ($n = 389$). Both groups of participants completed the Attitude Towards the Treatment of Animals Scale (AAS) and the Davis Interpersonal Reactivity Index (IRI), a measure of human-directed empathy. Comparisons between the two samples indicated that those within the animal protection community scored more highly on both the animal attitude and human-directed empathy measures. Correlational analyses revealed a positive relation between AAS and IRI scores for both samples, whilst the strength of the correlation was greater for those within the animal protection sample. These findings are discussed.

Keywords: animal protection, animals, attitudes, Davis Interpersonal Reactivity Index, empathy



Research which has attempted to quantify the factors which may influence attitudes towards, and treatment of, animals falls into two broad categories: demographic and personality variables. Some demographic factors which are reported to influence attitudes towards the treatment of animals include the presence of a companion animal in the current home and/or in childhood (Paul and Serpell 1993; Daly and Morton 2003); ethical, religious and/or political ideology (Bowd and Bowd 1989; Kimball 1989; Galvin and Herzog 1992); and other variables such as gender, age, and race (Kellert 1988; Herzog, Betchart and Pittman 1991; Signal and Taylor 2006a). Whilst complete consensus as to the strength and extent of the impact of demographic factors is lacking, nevertheless they remain relatively well researched.

On the other hand, personality variables which may influence attitudes towards the treatment of animals are not well quantified. One of the few studies to address this is that of Mathews and Herzog (1997), who reported on a questionnaire-based investigation into links between a general personality measure (16 Personality Factor Questionnaire (16PF) and the Animal Attitude Scale (AAS). However, they reported that the correlations between personality and attitudes to animals were generally low and non-significant. Broida et al. (1993) investigated the influence that the personality differences of approximately 1000 college students had on their attitudes towards vivisection. They reported that those who supported animal rights were more likely to oppose the use of animals in research and those who were not opposed to vivisection tended to be less empathic. Studies such as these two, however, measure generic personality factors, which may account for the low correlations reported; the age and validity of the instruments in some of the research may also be a factor. Within the growing body of research which addresses human-animal relationships, one particular aspect of personality which is beginning to receive substantial attention is human-directed empathy (e.g., Ascione and Arkow 1999; Taylor and Signal 2004). More specifically, researchers have posited an association between violence towards humans and/or animals and a lack of human-directed empathy, with empathy being proposed as a mediating factor in aggression to both humans and animals (Miller and Eisenberg 1988; Hastings et al. 2000; Taylor and Signal 2005). Whilst debate exists within the literature as to whether empathy is a learned ability (i.e., distinct from personality factors), a relatively stable personality trait (e.g., Daly and Morton 2003) or a combination of these (i.e., a personality trait mutable by experience, e.g., Preston and de Waal 2002), in the current study it is treated as the latter and defined as the ability to understand and share in another's emotional state (Eisenberg and Strayer 1987).

In an earlier paper, it was reported that within a student sample there was a moderate, significant correlation between aspects of human-directed empathy and attitudes towards the treatment of non-human species (Taylor and Signal 2005). The tool used to assess human-directed empathy was the Davis Interpersonal Reactivity Index (IRI), a self-report measure which assumes that empathy is a learned ability consisting of both cognitive and affective skills (Davis 1980). The findings of this earlier study suggested that students who scored more highly on the empathy measure also tended to score highly on the AAS, indicating more pro-animal welfare attitudes. However, it must be noted that there is a lack of consensus about both the direction and the strength of any such links between empathy and attitudes towards the treatment of animals (e.g., Paul 2000; Daly and Morton 2003; Furnham, McManus and Scott 2003; Taylor and Signal 2005). This disparity in research findings highlights the need for further research. Additionally, previous studies often have the methodological limitation of utilizing student and/or child samples, which may limit the generalizability of such results. Given the limitations of previous studies, there remains a need for further research to quantify personality and demographic variables and their influence on attitudes towards animals. Such research also needs to, if possible, begin to establish causal links. An examination of specific groups of individuals where there is an *a priori* expectation of elevated attitudes towards the treatment of animals may help in establishing baseline data.

Therefore, in the current paper, links between empathy and attitude towards the treatment of animals within two different populations are examined. That is, a general community sample was contrasted with a sample drawn specifically from the animal protection community. It was expected that those in the animal protection sample should have elevated attitudes towards the treatment of animals, and thus that they should have attendant elevated levels of human-directed empathy (Broida et al. 1993). It was also expected that the relationship between these would be stronger than seen in the general community sample.

Methods

Participants

Community Sample

An existing data set from a study which aimed to assess links between empathy, aggression and attitudes towards the treatment of animals within the general community formed the first sample in the current study. Questionnaires were administered by telephone to a random sample of approximately 600 adults throughout Australia (further details of this initial study can be found in Signal and Taylor 2006a).

Animal Protection Community

Participants within this sample were recruited from within the animal “protection” community. The researchers originally contacted 18 animal protection groups, 13 of which were able to disseminate the survey via email and listservs, resulting in approximately 400 responses. All groups had a significant presence on the internet and ranged from larger, international to smaller, more locally based groups.

Survey Instruments

A small number of demographic questions and two previously validated scales were used with both samples. The first, the Animal Attitude Scale (AAS) (Herzog, Betchart and Pittman 1991), is a 20-item, 5-point Likert-based scale with respondents indicating answers from Strongly Disagree to Strongly Agree to statements regarding attitudes to the treatment of animals. Sample items include “Wild animals should not be trapped and their skins made into fur coats,” “Basically humans have the right to use animals as they see fit,” and “The use of animals in rodeos and circuses is cruel.” The scale has been found to have high internal consistency (Cronbach's $\alpha = 0.86$; Signal and Taylor 2006b) and has previously been used successfully (e.g., Herzog et al. 1991; Taylor and Signal 2005; Signal and Taylor 2006a, 2006b). A high score on this scale indicates pro-welfare attitudes (H. Herzog, personal communication 2004).

The second scale used was the Davis Interpersonal Reactivity Index (IRI) (Davis 1980), one of the most commonly used and, according to Alterman et al. (2003), one of the most comprehensive measures of empathy. Although the full IRI consists of four sub-scales, several studies support the use of a truncated version of the IRI (Cliffordson 2001; Alterman et al. 2003) consisting of the Empathic Concern (EC) and Perspective Taking (PT) sub-scales. Therefore, in order to keep the current questionnaire as short and accessible as possible, only the two sub-scales, EC (measuring feelings of warmth, compassion and concern for others) and PT (assessing an individual's ability to adopt other-orientated perspectives), were used. Items within the IRI are answered using a 5-point scale, from Strongly Disagree to Strongly Agree. Examples of these items include “I often have tender, concerned feelings for people less fortunate than me” and “I sometimes find it difficult to see things from the ‘other guy’s’ point of view.”

Results

Raw data from 612 participants in the general community sample and 407 participants in the animal protection community were entered into SPSS v12.0. Negatively worded items in the AAS and the IRI were recoded before the following analyses were conducted. Removals due to missing data (i.e., some items were not answered by all participants) resulted in 543 and 389 valid entries from the general and animal protection communities, respectively. As has been highlighted in previous studies (e.g., Matthews and Herzog 1997; Taylor and Signal 2005), a consistent gender difference in both the AAS and the IRI sub-scale scores was found.

Presented in Table 1 are the mean AAS, EC, and PT scores gained within each of the two samples (general community and animal protection community). Scores on the AAS potentially range from 20 to 100, with higher scores indicating a more pro-animal welfare attitude. Scores on the sub-scales of the IRI range from 5 to 35, with higher scores indicating higher levels of the empathy trait being measured. As can be seen in Table 1, those within the animal protection community have

substantially higher mean scores on all scales. Further analyses showed these differences to be significant (AAS: $t = 32.28$, $p = 0.000$; EC: $t = 6.19$, $p = 0.000$; PT: $t = 6.15$, $p = 0.000$).

Table 1. Mean AAS, EC, and PT scores as a function of group.

	General Community		Animal Protection Community	
	Mean	SD	Mean	SD
AAS	67.6	9.32	84.7	10.53
EC	27.3	2.95	28.5	3.98
PT	25.6	3.32	26.8	4.01

AAS = Animal Attitude Scale ; EC = Empathic Concern sub-scale;
PT = Perspective Taking sub-scale

Pearson product-moment correlations between the sub-scales of the IRI and AAS scores were calculated for each sample, with positive correlations indicating higher levels of an IRI sub-scale to be related to higher scores on the AAS. Within the general community sample, correlations of 0.27 and 0.222 were found between the AAS and EC and PT sub-scales, respectively. In contrast, correlations of 0.30 (AAS/EC) and 0.14 (AAS/PT) were found within the animal protection community sample. All these correlations were significant at the 0.01 level.

A multivariate analysis was run (Group * Gender * Scale) to investigate potential gender-based interactions within the relations highlighted above. Analysis of between-subject effects showed that both Group (Community vs Animal Protection) and Gender had a significant effect on all three scale measures (AAS: $F_{\text{Group}} = 371.28$, $p = 0.000$; $F_{\text{Gender}} = 71.92$, $p = 0.000$; EC: $F_{\text{Group}} = 8.63$, $p = 0.003$; $F_{\text{Gender}} = 28.21$, $p = 0.000$; PT: $F_{\text{Group}} = 13.98$, $p = 0.000$; $F_{\text{Gender}} = 8.88$, $p = 0.003$). However, the interaction between Group and Gender was not significant on any of the dependent measures (AAS: $F_{\text{Group} \times \text{Gender}} = 1.69$, $p = 0.194$; EC: $F_{\text{Group} \times \text{Gender}} = 0.002$, $p = 0.964$; PT: $F_{\text{Group} \times \text{Gender}} = 0.83$, $p = 0.364$). This suggests that the over representation of females within the animal protection community was not the source of the significant difference found between the Groups. While females scored higher than males generally, males within the animal protection community consistently scored higher than males from the general community on all three measures, as can be seen in Table 2. Interestingly, males within the animal protection community also scored higher than females from the general community on the AAS and PT scales. For a further discussion of the gender interactions on AAS scores within the general community alone, see Signal and Taylor (2006a).

Table 2. Mean AAS, EC, and PT scores presented as a function of group and gender

Scale	Gender	Group	Mean	SD
AAS	Male	Community	64.0	8.64
		Animal Protection	78.1	14.90
	Female	Community	69.6	9.06
		Animal Protection	85.7	9.02
EC	Male	Community	26.5	2.88
		Animal Protection	27.3	3.78
	Female	Community	27.9	2.85
		Animal Protection	28.7	3.97
PT	Male	Community	24.9	3.52
		Animal Protection	26.3	3.55
	Female	Community	26.1	3.16
		Animal Protection	26.9	4.09

AAS = Animal Attitude Scale ; EC = Empathic Concern sub-scale;
PT = Perspective Taking sub-scale

Discussion

It was anticipated that those within the animal protection community would have better attitudes towards the treatment of animals (as measured by the AAS) and attendant elevated levels of human-directed empathy, compared with the general community sample. Furthermore it was anticipated that the relationship between these variables would be stronger than that seen in the general community sample. The first of these hypotheses was supported in that participants drawn from the animal protection community scored significantly higher on all three measures than those from the general community, thus tentatively supporting the hypothesis that there is a link between attitudes towards the treatment of animals and human-directed empathy.

When the relationships between the scales were investigated, despite all correlations being significant, only the EC–AAS relationship was stronger in the animal protection community. The EC sub-scale has been found to relate to global measures of emotion, i.e., it reflects a general concern for others whereas the PT sub-scale relates to general and interpersonal social functioning (Davis 1980). Whilst those from the animal protection sample scored more highly on both the EC and PT sub-scales than those within the general community sample, the weaker strength of the PT–AAS correlation may be because it measures social functioning, which *prima-facie* has no bearing on individual attitudes towards the treatment of animals. In contrast, the greater strength of the EC–AAS relation maybe due to an overall elevated concern for others which is not necessarily restricted to non-human species. It may therefore be that the EC component of the IRI taps into animal-directed as well as human-directed empathy, a possibility that warrants further attention.

Alternatively, it may be that the relationship between PT and AAS within the animal protection community is less strong due to their commitment to a particular philosophy/ideology which precludes their taking the perspective of others and in particular taking the view of others who may have a more functional attitude to the treatment of animals. The findings of Galvin and Herzog (1992) go some way to supporting this idea in that they found that animal rights supporters were more likely to be absolutist rather than relativist/situationist in their philosophy. Again this indicates an area in need of further investigation.

In terms of gender, as was expected, females scored higher than males on the current measures of empathy and attitude towards the treatment of animals within each group. However, what was unexpected was the fact that males from the animal protection community scored more highly on the AAS and the PT scales than anyone in the general community, regardless of gender. Again this may lend some weight to the argument that there is a link between attitude towards the treatment of animals and human-directed empathy, if one considers PT to be a more socially sanctioned expression of male empathy than EC (Vogel et al. 2003).

Strengths of the current study include the large sample sizes and the potential generalizability of the findings due to the use of a normative community sample. Additionally, the reliance on a large community-based sample also provides much needed baseline data in this area of inquiry. Furthermore, this study represents one of the few which examines the attitudes of those within the animal protection community on a large scale (for notable exceptions, see Plous 1991). Limitations may include the scales used in this study, inasmuch as there may be other noteworthy interactions between facets of human-directed empathy and attitudes towards the treatment of animals that have been overlooked by the use of the truncated IRI.

In summary, the results from this study further corroborate the thesis that there is a link between attitudes to the treatment of animals and human-directed empathy. However, it should be noted that there is still insufficient evidence to imply causality. This, along with the topics highlighted above, suggests areas worthy of future research.

References

- Alterman, A. I., McDermott, P. A., Cacciola, J. S. and Rutherford, M. J. 2003. Latent structure of the Davis Interpersonal Reactivity Index in Methadone maintenance patients. *Journal of Psychopathology and Behavioral Assessment* 25(4): 257–265.
- Ascione, F. R. and Arkow, P. eds. 1999. *Child Abuse, Domestic Violence, and Animal Abuse: Linking the Circles of Compassion for Prevention and Intervention*. West Lafayette, IN: Purdue University Press.
- Bowd, A. D. and Bowd, A. C. 1989. Attitudes towards the treatment of animals: A study of Christian groups in Australia. *Anthrozoös* 3(1): 20–24.
- Broida, J., Tingley, L., Kimball, R. and Miele, J. 1993. Personality differences between pro- and anti-vivisectionists. *Society & Animals* 1(2): 129–144.
- Cliffordson, C. 2001. Parents' judgments and students' self-judgments of empathy. *European Journal of Psychological Assessment* 17(1): 36–47.
- Daly, B. and Morton, L. L. 2003. Children with pets do not show higher empathy: A challenge to current views. *Anthrozoös* 16(4): 298–314.
- Davis, M. H. 1980. A multidimensional approach to individual differences in empathy. *JSAS Catalogue of Selected Documents in Psychology* 10: 85.
- Eisenberg, N. and Strayer, J. 1987. Critical issues in the study of empathy. In *Empathy and its Development*, 3–13, ed. N. Eisenberg and J. Strayer. Cambridge: Cambridge University Press.
- Furnham, A., McManus, C. and Scott, D. 2003. Personality, empathy and attitudes to animal welfare. *Anthrozoös* 16(2): 135–146.
- Galvin, S. and Herzog, H. 1992. Ethical ideology, animal activism and attitudes towards the treatment of animals. *Ethics and Behavior* 2: 141–149.
- Hastings, P. D., Zahn-Waxler, C., Robinson, J., Usher, B. and Bridges, D. 2000. The development of concern for others in children with behavior problems. *Developmental Psychology* 36(5): 531–546.
- Herzog, H., Betchart, N. and Pittman, R. 1991. Sex role identity and attitudes toward animals. *Anthrozoös* 4(3): 184–192.
- Kellert, S. R. 1988. Human–animal interactions: A review of American attitudes toward wild and domestic animals in the 20th century. In *Animals and People Sharing the World*, 137–175, ed. A. N. Rowan. Hanover, NH: University Press of New England.
- Kimball, R. 1989. Liberal/Conservative voting records compared to interest in animal protection bills. *PsyETA Bulletin* 9: 7–9.
- Mathews, S. and Herzog, H. 1997. Personality and attitudes towards the treatment of animals. *Society & Animals* 5(2): 57–63.
- Miller, P. A. and Eisenberg, N. 1988. The relation of empathy to aggressive and externalizing/antisocial behavior. *Psychological Bulletin* 103(3): 324–344.
- Paul, E. S. 2000. Empathy with animals and with humans: Are they linked? *Anthrozoös* 13(4): 194–202.
- Paul, E. S. and Serpell, J. A. 1993. Childhood pet keeping and humane attitudes in young adulthood. *Animal Welfare* 2(4): 321–337.
- Plous, S. 1991. An attitude survey of animal rights activists. *Psychological Science* 2: 194–196.
- Preston, S. D. and de Waal, F. B. M. 2002. Empathy: Its ultimate and proximate bases. *Behavioral and Brain Sciences* 25: 1–72.
- Signal, T. D. and Taylor, N. 2006a. Attitudes to animals: Demographics within a community sample. *Society & Animals* 14(2): 147–157.
- Signal, T. D. and Taylor, N. 2006b. Attitudes to animals within the animal protection community compared to a normative community sample. *Society & Animals* 14(3): 265–274.
- Taylor, N. and Signal, T. 2004. Attitudes to animals: An indicator of interpersonal violence? *Journal of the Home Economics Institute of Australia* 11(3): 9–12.
- Taylor, N. and Signal, T. D. 2005. Empathy and attitudes towards animals. *Anthrozoös* 18(1): 18–27.
- Vogel, D., Wester, S., Heesacker, M. and Madon, S. 2003. Confirming gender stereotypes: A social role perspective. *Sex Roles* 48(11/12): 519–528.