CHILDHOOD PET KEEPING AND HUMANE ATTITUDES IN YOUNG ADULTHOOD

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Abstract *Animal Welfare 1993, 2:* 321-337

A questionnaire survey of 385 UK-based university students was used to investigate whether there was an association between pet keeping in childhood and humane attitudes in young adulthood. Subjects gave detailed, retrospective reports of the pets they had kept during their childhoods, and a variety of attitude scales and open-ended questions were used to measure their current attitudes concerning the welfare of both animals and humans. Higher levels of childhood pet keeping were related to more positive attitudes towards pet animals and greater concerns about the welfare of non-pet animals and humans. Ethical food avoidance practices (eg vegetarianism); membership of animal welfare and environmental organizations were also found to be associated with pet keeping during childhood. Knowledge of the experiences that underlie existing variation in humane attitudes will greatly assist the development of more effective humane education programmes in the future.

Keywords: *animal welfare, childhood, empathy, humane attitudes, pet keeping, questionnaire*

Introduction

Data presented in this paper come from a questionnaire survey of university students in which subjects were asked to report retrospectively on their childhood histories of pet ownership, as well as their current attitudes to animals. The information collected from students in this survey was designed to investigate the possibility that childhood involvement with pets is associated with the development of more humane attitudes in later life. That is, more positive adult attitudes towards - and empathy with - pet animals, other animals and human beings.

This idea has a long historical pedigree (Serpell & Paul in press). Locke (1699), one of the founders of modern educational theory, advocated the keeping of pets by children

in order to encourage the development of tender feelings towards animals and people alike. Towards the end of the last century, the notion that childhood pet keeping was causally related to humane attitudes came to particular prominence when it was adopted as a central tenet of the humane education movement (Finch 1989). Since then, school-based humane education programmes have been practised on the basis of this idea, despite equivocal findings from the few studies that have attempted to measure their efficacy (eg Vockell & Hodal 1980, Ascione 1992). Nowadays, many parents also express the firm belief that caring for pets in childhood encourages respect for all kinds of animals, and instils a more caring nature in general (Macdonald 1981, Salomon 1981, Paul 1992).

The idea that caring for pets in childhood will help to inculcate a greater respect and empathy for *pet animals* is a reasonably plausible one. Childhood pet keeping is positively correlated with adult pet ownership levels (Serpell 1981) and therefore, presumably, with positive attitudes towards pets during adulthood (see also Poresky *et al* 1988). The further idea of a relationship existing between childhood pet ownership and adult attitudes to *other kinds of animals*, however, has received very little research attention, although Bowd (1984b) found that during childhood, pet ownership was associated with more positive attitudes to a number of non-pet animals, such as lions, pigs, chickens and snakes. The idea that learning to care for pet animals during childhood may lead to a greater concern for, or emotional empathy[1] with, *humans* in adulthood is perhaps particularly ambitious. It has nevertheless received at least some support from research looking at the relationship between pet ownership and empathy during childhood itself. Poresky and Hendrix (1988), for example, found that three to six-year-old, pet owning children achieved higher empathy scores than their non-pet owning counterparts. Bryant (1986) found that ten-year-old children who used pets for social support when stressed had higher empathy scores than those who did not. Bailey (1988), on the other hand, found no differences between pet owning and non-pet owning pre-schoolers, using a role-taking task as a test of empathy. She did, however, find that exposing the same children to a puppy within the pre-school curriculum significantly increased scores on the same empathy test.

Methods

Subjects and procedure

The childhood pet ownership questionnaire (see opposite), with accompanying letter and prepaid return envelope, was circulated to approximately 1,200 students in three University of Cambridge colleges, one of which was solely attended by postgraduates. Four-hundred and twenty questionnaires were completed and returned, representing a 35 per cent response rate. Although this is a reasonable response rate for a relatively long

[1] As opposed to cognitive empathy which is simply the recognition of another's state of emotion rather than any vicarious experience of that person's actual emotion.

and unsolicited questionnaire, the sample does suffer the disadvantage of being a self-selected population. Nevertheless, a complete range of pet owning and non-pet owning subjects responded (54% reported pets of their own during childhood and 88% reported family pets) which suggests that the self-selection process did not result in any major biases due to subjects' pet keeping experiences. Thirty-five questionnaires completed by non-Western nationals were excluded from the present analysis (ie 8.3% of completed questionnaires), in order to avoid problems associated with cultural differences in attitudes towards and ownership of pet animals. This left a sample of 230 men and 155 women, of British (91%), other European (4%) and other Western (5%) nationalities. The sexes and nationalities of respondents were representative of the college populations surveyed. The mean age of the subjects was 22.2 years (this is relatively high due to survey of students from the postgraduate college and mature students).

Questionnaire

In the first part of the questionnaire, subjects were asked to give information concerning all the pets that they and their families had owned during their childhoods (0-16 years). Seven categories of pet were distinguished: a) horses, ponies or donkeys; b) dogs; c) cats; d) small mammals; e) birds; f) fish, reptiles, amphibians, insects, spiders etc; g) other pets. Subjects were also asked to list any of these pets which they considered to have been important to them in some way during childhood. Data from these questions were used to create the independent variables listed below.

In the second part of the questionnaire, subjects were required to answer a number of questions and complete attitude scales aimed at finding out about their current attitudes towards pets, other animals and human beings. These were used as dependent variables in the analysis and are also described in the section below.

Copies of the original questionnaire are available from the first author upon request.

Data and analyses

Independent variables

It has been noted (eg Poresky *et al* 1987, Melson 1989, 1990) that many empirical studies of pet ownership have been blighted by over-simplified classification of subjects as, for example, either pet owners or non-pet owners. The retrospective approach used in this study offered an opportunity to assess the whole of a subject's childhood pet experiences in a more detailed way. Data from the first part of the questionnaire were used to create three separate, although not mutually exclusive, measures of subjects' overall levels of childhood pet involvement. These were used as *independent* variables for the purposes of the present analyses:

Pets owned

The number of pets owned *specifically by the subject*, ie not by other members of the family or by the family as a whole, during childhood. (NB For the purposes of this and the following category, multiple fish, reptiles, amphibians, insects, spiders etc were counted as equivalent to one pet per sub-category of animal).

Family pets owned
The *total* number of pets owned in the subject's family during childhood (this included pets owned by the subject, by siblings, by parents and by the family as a whole).

Important pets
The number of pets reported as having been important to the subject in some way during childhood (these pets could have belonged to any member of the family). Data for this variable were obtained by asking subjects to list any pets owned by themselves or their family that had been important to them in some way during childhood.

Dependent variables
The second part of the questionnaire consisted of questions and attitude scales designed to assess subjects' attitudes towards pets, other animals and other human beings. These were used as *dependent* variables for the present analyses:

Animal-related involvements
These were a series of questions concerning: what pets were currently owned and what pets subjects would like to own in the future; whether or not subjects would encourage their own future children to keep pets; whether subjects took part in any animal-related hobbies or activities (fishing, hunting, horse-riding and bird-watching); whether subjects were members of animal welfare or environmental organizations or charities; whether subjects practised any sorts of ethical food avoidances such as vegetarianism.

Attitude scales
1. Pet Attitude Scale (Templer *et al* 1981). This aimed to measure a person's 'favorableness of attitudes towards pets' in general. Higher scores represented more favourable attitudes towards pets.
2. Scale of Attitudes Towards the Treatment of Animals. A modified, updated and Anglicized scale from Bowd (1984a). This modified version fulfilled statistical conventions of validity and reliability in the student population surveyed. Three sub-scales were included; these concerned attitudes towards the treatment of a) farm, b) wild and c) laboratory animals. Higher scores on all these scales represented greater concern about the welfare and treatment of animals.
3. Empathy Scale (Mehrabian & Epstein 1972). This was designed to measure *emotional* empathy as defined as 'a vicarious emotional response to the perceived emotional experiences of others'. Higher scores represented greater empathy with other human beings[2]. For the purposes of the present analyses, scores from the two pet animal empathy questions of the scale were excluded.

[2] It is interesting that Mehrabian and Epstein included statements concerning pet animals in their emotional empathy scale. This suggests that they assumed pet and human empathy to be aspects of the same underlying construct. The fact that these two pet-based statements achieved reliability and validity within their scale, suggests that pet and human empathy are likely to be related, at least to some degree.

Charity donations test

Subjects were asked to indicate how they would distribute £100 among eight different hypothetical charities. Two of these charities were concerned with animal welfare, two with conservation of the natural environment and four with human health and welfare.

Analyses and presentation of results

Non-normality of the pet ownership and involvement data (both before and after transformations) and the ordinal nature of the data available from the attitude scales, meant that the assumptions needed to perform parametric statistics were not fully met (see Snedecor & Cochran 1976). All statistical analyses were therefore conducted using non-parametric, two-tailed tests (Chi-squares, Kendall correlations, Kruskal-Wallis one-way analyses of variance and Mann-Whitney U tests). Because of this, the figures presented in this paper take the form of frequency histograms and box and whisker plots (ie showing medians, 25th and 75th percentiles and maximum and minimum points). One exception to this is Figure 8, showing the donations of male and female subjects in the charity donations test. Because of a large number of ties in these data (subjects tended to allocate their donations in £10 lots), box and whisker plots were not informative, and the data have been illustrated by histograms using means and standard error bars.

Results

Animal-related involvements

The number of pets that subjects listed as wanting to own in the future (as students, most of them were unable to keep pets currently) was significantly positively correlated with the number of pets owned during childhood (Kendall's $T = 0.1973$, $P<0.001$); the number of pets owned by subjects' families as a whole during childhood ($T = 0.2545$, $P<0.001$), and the number of important childhood pets they reported having had ($T = 0.3834$, $P<0.001$). Subjects who said they would encourage their own future children to keep pets were found to have had significantly more pets of their own during childhood (Mann-Whitney $U = 7033$, $P<0.0005$; see Figure 1)[3]; more family pets ($U = 5197.0$, $P<0.0001$), and more important pets ($U = 4290.0$, $P<0.0001$) than those who did not.

Subjects who reported regularly going fishing were not significantly different in their childhood pet involvements from those who did not regularly fish. Hunters and bird-watchers, however, both owned more pets (specifically of their own) during childhood than their non-hunting and non-bird-watching counterparts ($U = 914.5$, $P<0.05$; and $U = 2545.5$, $P<0.05$ respectively).

[3] NB Sample sizes vary between figures according to the number of subjects who answered or completed each particular question or attitude scale. For example, the sample in Figure 1 is particularly small ($n = 356$) because a number of subjects stated that they did not anticipate having children of their own in the future.

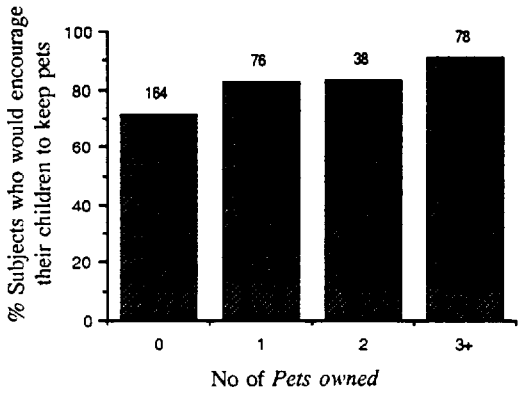

Figure 1 **Percentage of subjects who would encourage their own future children to keep pets, plotted against the numbers of *Pets owned* during childhood (*n* is indicated above each bar).**

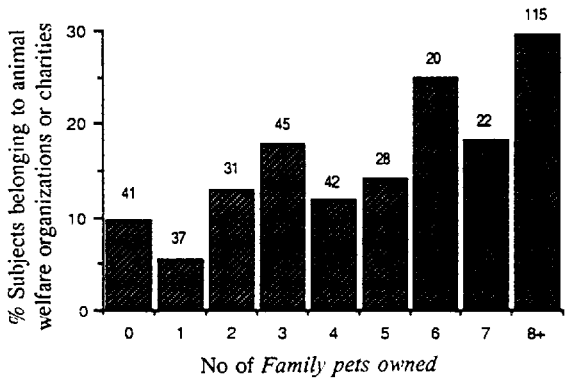

Figure 2 **Percentage of subjects who currently belong to animal welfare organizations or charities, plotted against the number of *Family pets owned* during childhood (*n* is indicated above each bar).**

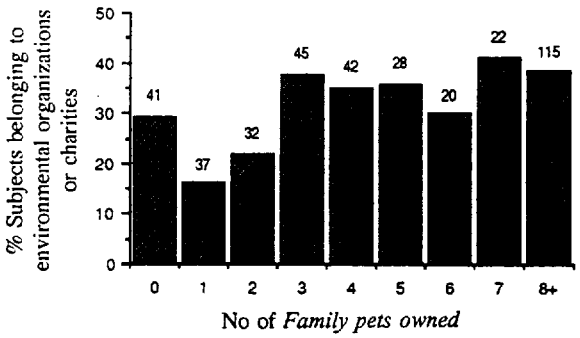

Figure 3 **Percentage of subjects who currently belong to environmental organizations or charities, plotted against the number of *Family pets owned* during childhood (*n* is indicated above each bar).**

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Current horse-riders, when compared with non-riders, showed greater childhood involvement with pets on all three measures considered (*Pets owned*, U = 3106.0, P<0.0001; *Family pets owned*, U = 3237.0, P<0.0001; *Important pets*, U = 4089.0, P<0.0005).

Members of organizations or charities concerned with animal welfare reported having had more pets of their own (U = 8618.0, P<0.005); more family pets (U = 7293.0, P<0.0001; see Figure 2), and more important pets (U = 8004.0, P<0.005) during their childhood than non-members. Similarly, members of organizations or charities concerned with conservation and the environment reported more family pets (U = 13626.0, P<0.05; see Figure 3) and more important pets than non-members (U = 13486.5, P<0.05). However, when the sample was split by sex, this latter relationship held for male subjects only (*Family pets owned*, U = 4543.5, P<0.05; *Important pets*, U = 4467.5, P<0.05).

Subjects who currently avoided eating at least one type of animal-based food product for ethical or moral reasons (eg vegans; vegetarians; those who do not eat veal, battery eggs etc) reported having had more pets of their own during childhood (U = 13848.0, P<0.05), although this association was found to apply only to female subjects (U = 2310.5, P<0.05) when the sample was split by sex. This may be explained in part by the fact the female subjects were considerably more likely than males to report some kind of food avoidance practice[4] (Females 42.5%, Males 26.3%, χ^2 = 10.14, P<0.005). However, both male and female food avoiders reported having had more important pets (U = 12030.5, P<0.0005; see Figure 4) during childhood than non-food avoiding subjects.

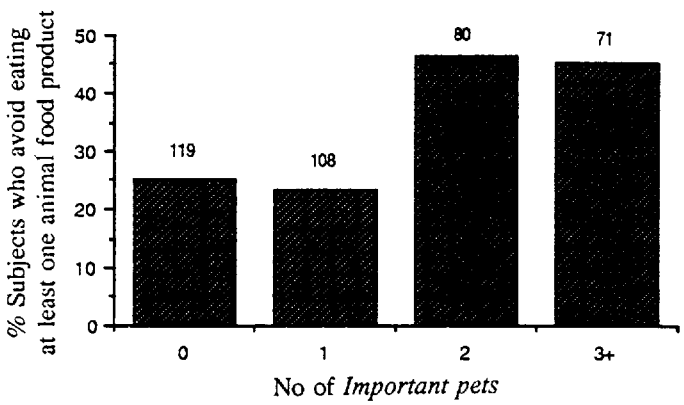

Figure 4 **Percentage of subjects who currently avoid eating one or more animal-based food products for ethical or moral reasons, plotted against the number of *Important pets* owned in childhood (*n* is indicated above each bar).**

[4] The predominance of women in the vegetarian movement has been noted and discussed by a number of commentators (eg Adams 1990, Herzog *et al* 1991).

Attitude scales

Table 1 gives a full summary of the results of correlations between the pet involvement measures and the three attitude scales administered.

Table 1 **Kendall correlations between attitude scale scores and the number of *Pets owned* during childhood; number of *Family pets owned*, and number of *Important pets* kept during childhood.**

Attitude scale	Kendall correlation *(T)*		
	Pets owned	***Family pets owned***	***Important pets***
1) Pet Attitude Scale	0.1723****	0.2279****	0.4190****
2) Scale of Attitudes Towards the Treatment of Animals	0.0846*	0.1083***	0.2604****
a) Farm animals	0.0813*	0.0888*	0.2320****
b) Wild animals	0.0967*	0.0685*	0.2184****
c) Laboratory animals	0.0518	0.1117***	0.2024****
3) Empathy Scale	0.1134***	0.0896*	0.1421****

*$P<0.05$; ***$P<0.005$; ****$P<0.001$

Current attitudes towards pets, as measured by the Pet Attitude Scale (Templer *et al* 1981) were significantly positively correlated with pet ownership, family pet ownership and number of important pets reported as having been kept during childhood (Figure 5).

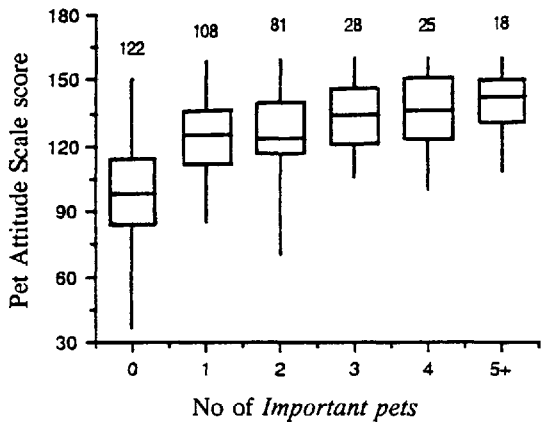

Figure 5 **Pet Attitude Scale scores plotted against the number of *Important pets* owned in childhood.**

Medians, upper and lower quartiles and maximum and minimum scores are shown; *n* is indicated above each box.

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Total scores on the Scale of Attitudes Towards the Treatment of Animals (modified from Bowd 1984a) were significantly and positively correlated with levels of childhood pet ownership, family pet ownership and the number of important childhood pets (see Figure 6). Scores on the sub-scales concerning the treatment of farm and wild animals showed significant positive correlations with all three pet involvement measures, while attitudes towards the treatment of laboratory animals were significantly correlated with the number of family pets owned and the number of important pets owned, but showed no relationship with the number of pets owned by subjects themselves during childhood.

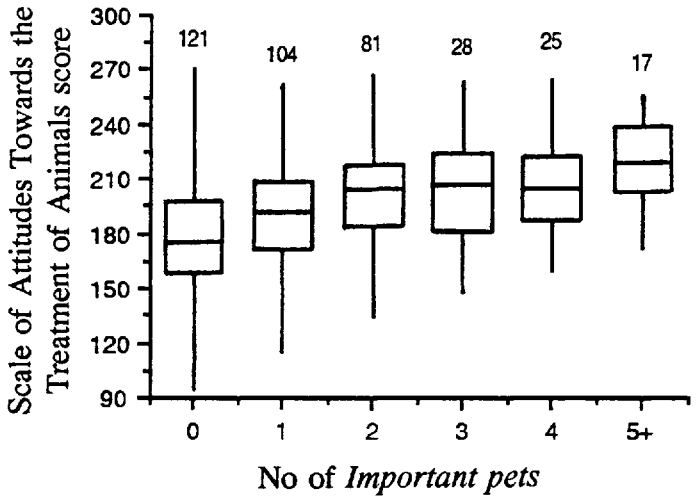

Figure 6 **Scale of Attitudes Towards the Treatment of Animals scores plotted against the number of *Important pets* owned in childhood.**
Medians, upper and lower quartiles and maximum and minimum scores are shown; *n* is indicated above each box.

Empathy Scale (Mehrabian & Epstein 1972) scores were significantly positively correlated with childhood pet ownership levels, family pet ownership levels and the number of important pets kept during childhood. However, when the sample was broken down by sex, these correlations were found only among male subjects (*Pets owned*, $T = 0.1088$, $P<0.05$; *Family pets owned*, $T = 0.1096$, $P<0.05$; *Important pets*, $T = 0.1455$, $P<0.005$; see Figures 7a, 7b and Discussion).

Charity donations test

The amount of money hypothetically donated to animal welfare charities in the charity test was significantly positively correlated with the number of family pets ($T = 0.1057$, $P<0.01$) and the number of important childhood pets ($T = 0.2149$, $P<0.001$) reported. Money donated to environmental charities did not correlate significantly with any of the childhood pet experience measures, but the amount of money donated to human welfare

charities was significantly negatively correlated with the number of important childhood pets reported, particularly among male subjects (T = -0.0972, P<0.05; Men, T = -0.1324, P<0.05; Women, T = -0.0410, non-significant).

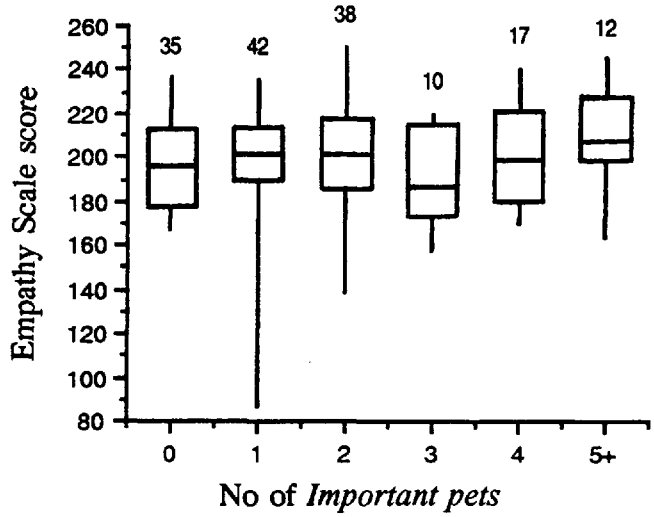

Figure 7a **Female subjects' Empathy Scale scores plotted against the number of *Important pets* owned in childhood.**

Medians, upper and lower quartiles and maximum and minimum scores are shown; *n* is indicated above each box.

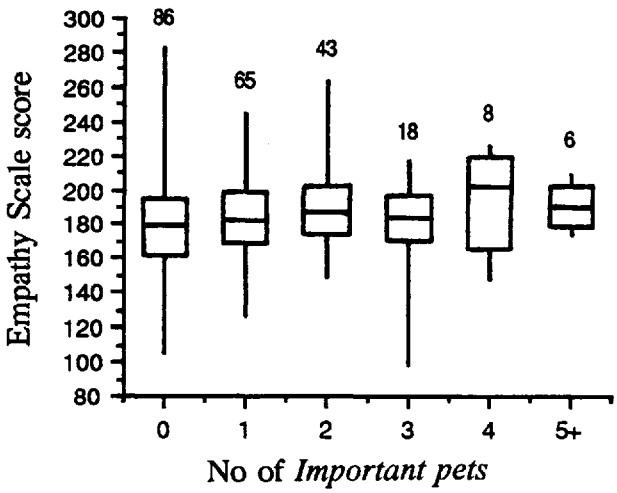

Figure 7b **Male subjects' Empathy Scale scores plotted against the number of *Important pets* owned in childhood.**

Medians, upper and lower quartiles and maximum and minimum scores are shown; *n* is indicated above each box.

Figure 8 shows the relationship between the number of important pets owned in childhood, and donations to each of the three charity types described.

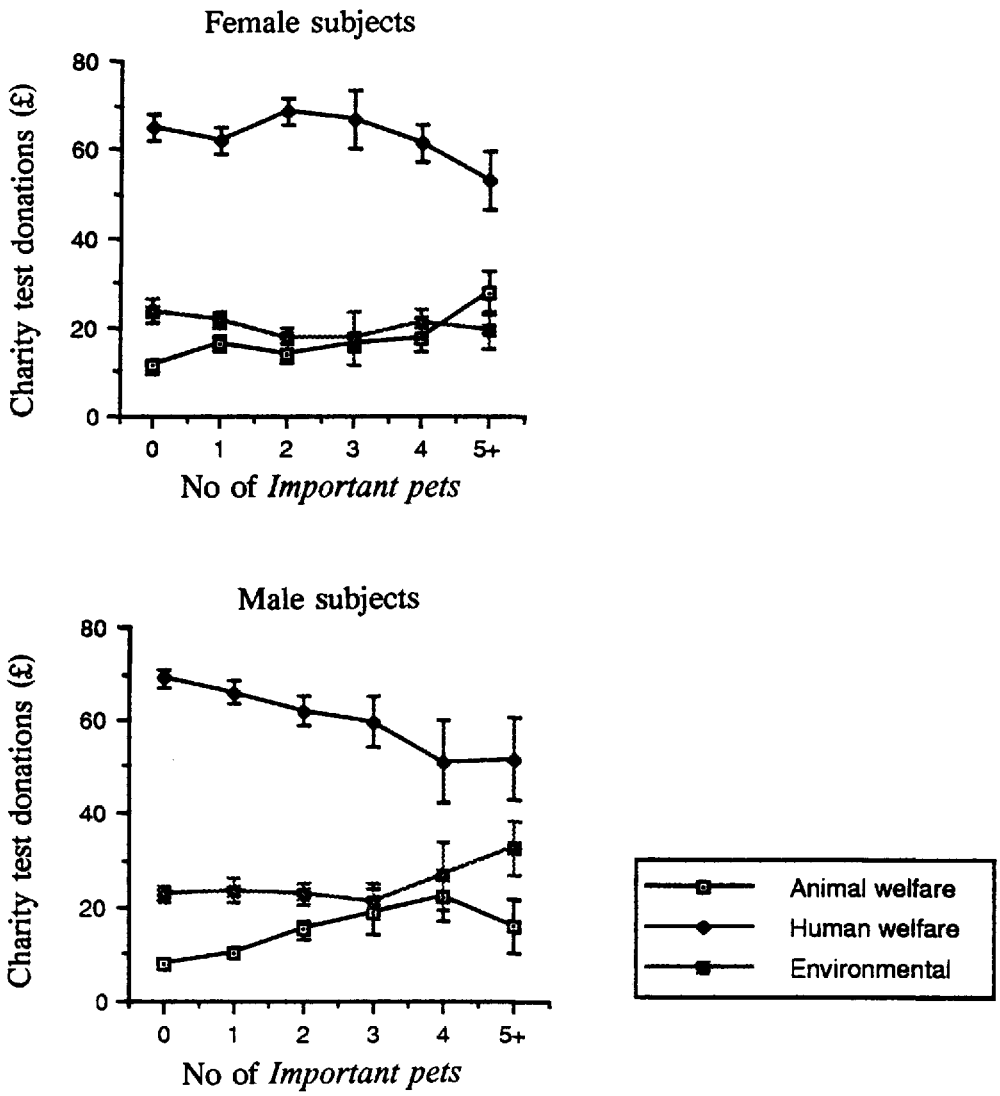

Figure 8 **Mean sums of money hypothetically donated to animal welfare, human welfare and environmental conservation charities, plotted against the number of *Important pets* owned in childhood (error bars denote one standard error of the mean).**

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Discussion

Results obtained in this survey tend to support the view that keeping pet animals in childhood helps to develop more positive and caring attitudes towards pets in adulthood. Students' attitudes towards pets were found to be positively correlated with all three of the childhood pet involvement measures considered *(Pets owned, Family pets owned* and *Important pets)*. Likewise, the positive relationship found between childhood pet ownership and the number and types of pets that subjects reported wanting to own in the future, seems to confirm previous findings that early experience of pet ownership tends to set a pattern for adult life (Serpell 1981, Poresky *et al* 1988, Kidd & Kidd 1989). The additional finding of a link between subjects' childhood pet keeping experiences and their intentions concerning whether or not to encourage their own future children to keep pets is consistent with the inter-generational continuity of attitudes to pet dogs found by Gage and Magnuson-Martinson (1988).

The relationship between childhood pet involvement and adult attitudes does not stop at attitudes towards pets. A positive association was also found between involvement with pet animals in childhood and self-reported concern about the treatment and welfare of laboratory, farm and wild animals. This relationship was further confirmed by the positive association found between childhood pet involvement and ethical food avoidance practices such as vegetarianism, and the finding that childhood pet involvement was also positively associated with membership of animal welfare and environmental organizations. The charity donations test also demonstrated a positive correlation between the amount of money hypothetically donated to animal welfare charities and childhood involvement with pets.

The finding that empathy with humans was correlated with childhood pet involvement is also in keeping with the predictions outlined in the introduction to this paper. However, the association was weak and was only detected amongst male subjects when the sample was split by sex. Although this latter result can be explained in large part by a ceiling effect (the majority of female subjects obtained high scores on the empathy scale), the fact remains that the association between childhood pet keeping and adult empathy with humans is able to account for only a very small proportion of the overall variance in empathy scores. Whether the connection between childhood pet keeping and adult empathy for human beings is quantitatively or qualitatively different from that found with adult concern for animals is an important question that has yet to be resolved.

In summary, the results presented here demonstrate that more humane adult attitudes, towards both animals and people, are indeed associated with higher levels of reported childhood pet ownership. Moreover, those subjects who reported having had important childhood pets were particularly likely to express more humane attitudes in adulthood. The data also suggest that childhood pet involvement may be related to heightened environmental concerns in adulthood. As yet, however, these findings shed little light on the causal relationships underlying these statistical associations.

The self-selected nature of the survey population means that certain groups, such as those with little experience of childhood pet keeping, might have been under-represented

in the sample. However, the generally broad range found in the number of childhood pets owned by subjects suggests that no major biases were operating in this respect (see sample sizes in Figures 1 and 2). Perhaps a more important problem concerns the above average socio-economic status and educational level of the students surveyed. Data obtained from students at a prestigious university cannot be assumed to be applicable to the wider population. Replication of this study amongst a representative sample is needed before firm conclusions can be drawn concerning its more general relevance. Nevertheless, previous studies have shown that socio-economic status exhibits neither a strong nor consistent association with overall pet ownership levels (eg Godwin 1975, Franti *et al* 1980, Wise & Kushman 1984, Marx *et al* 1988). There is, therefore, no a priori reason for expecting the sampled population to differ significantly from the norm in terms of any relationship between childhood pet keeping and adult attitudes.

The fact that the data used here relied on retrospective reporting of childhood experiences and feelings also means that the present findings need to be interpreted with some caution. Subjects may have been inaccurate or selective in their recollections of childhood pets, although this seems unlikely to have been a major or widespread problem, since no respondents indicated having any difficulties remembering what pets were owned, and by whom, during childhood. Memories concerning what childhood pets were important, however, concern the recall of *feelings* and may therefore be especially vulnerable to bias. For example, the sort of person who is willing to admit that they had pets that were important to them during childhood, may also be more likely to respond sensitively and empathetically to questions on the attitude scales. This argument is unlikely to apply, however, to responses to more factual questions concerning membership of animal welfare or environmental organizations, vegetarianism, and so on. In addition, subsequent analysis showed that the majority of pets nominated as important were either cats or dogs (see Paul 1992) suggesting that something about the actual *quality* of the relationship that can be developed with certain types of pet may play a considerable part in determining whether or not a childhood companion animal is remembered as having been important.

With these various provisos in mind, we can suggest a range of possible explanations for the present findings. First, it is conceivable that the results were affected by subjects' preconceptions regarding the benefits of pet ownership. For example, a number of the students who took part in the survey reported believing that childhood pet ownership encourages 'respect for animals' and a 'caring' nature in general (see Paul 1992). Subjects who personally held such beliefs may therefore have responded to the questionnaire in an 'appropriate' manner. Subjects may also have responded in such a way as to give the investigator what they perceived to be the 'right' answers. Potential biases of this kind, however, are unlikely to have affected answers to more factual questions concerning, say, membership of organizations or vegetarianism.

Second, it is possible that the present findings are largely a product of parental attitudes. Research on other topics suggests that certain attitudes, such as political and religious orientation, are transmitted from parents to their children (eg see Oskamp 1977).

Likewise, the sorts of parents who encourage their children to have pets and to perceive them as important may also be the kinds of parents who would be keen on inculcating kindness and sympathy towards both animal and human others. This explanation, however, begs the question as to why this particular constellation of attitudes and behaviour existed in the parents to begin with. Unfortunately, it was not possible to measure parental attitudes to animals or other people directly in the present study. However, the relationship between parents' and children's attitudes to animals and animal-related issues represents a potentially fruitful area for future research.

Third, it may be that some people are essentially predisposed to be more animal-orientated than others, and that this personality trait is relatively stable throughout an individual's development. Young adults who identify strongly with animals now, may also have been more animal-orientated as children, and hence more likely to report more important childhood pets. They may also have been more effective in childhood at influencing the purchase of more interesting and important pets such as dogs and cats. This idea would not, however, explain why such people tend also to score higher on a human empathy scale, unless of course a direct link between animal orientation and overall empathetic tendencies could be postulated. Nevertheless, since both children and adults vary considerably in their overall liking for animals, work investigating the possible endogenous sources of such variation is likely to prove valuable in the future.

Finally, it is possible that the humane educationalists are substantially correct, and that childhood relationships with pets do indeed have a direct formative influence on the development of humane attitudes. The mechanism by which such an effect might be operating still remains to be elucidated, although one could postulate a process of generalization from particular feelings towards individual pets to a more global concern for animals as a group. Even then, however, it is not at all clear how such a process could include empathy with humans, unless one proposes some sort of general identification or sympathy with vulnerable individuals, regardless of species (see eg ten Bensel 1984). Further research, focusing on the ways in which people structure their beliefs about the welfare of both animals and people, should offer some valuable insights into the processes underlying the development of humane and animal welfare orientated attitudes.

Conclusions

It is evident that public opinion is the all-important driving force for improvements in animal welfare at both an individual and societal level. Although humane education has been directed for many years towards improving people's (and particularly children's) concerns about the welfare of animals, recent research has revealed that such work is considerably less successful that had originally been hoped (Ascoine 1992). The main problem seems to be a simple lack of understanding of the processes by which humane attitudes develop. As Bowd (1989) pointed out, '*if we are to change the way people behave towards animals, we must first learn about the origins of that behaviour in childhood*'. Although the present study can give no definitive answers in this respect, it

has provided further evidence of a possible link between childhood experience of animals and the development of subsequent adult attitudes towards both animals and fellow humans. It has also opened up a number of potentially fruitful avenues of future research.

For many children, companion animals become honorary family members and it is difficult to imagine how such early and significant bonds could fail to engender at least some sense of kinship or affinity with other non-human species. The precise causal mechanisms underlying the process of generalization from individual pets to animals as a group are as yet unclear, and further research is needed to improve our understanding of the relevant developmental processes involved. The information gained from such studies is likely to assist programmes of humane education to become better focused and more effective in the future.

Animal welfare implications

Future improvements in the welfare of animals depend crucially on the attitudes and beliefs of society - this includes the animal users as well as the general public. Yet almost nothing is known about the reasons why some people feel great concern about the welfare of animals while others appear largely indifferent to such issues. Knowledge of the experiences that underlie existing variation in humane attitudes will greatly assist the development of more effective humane education programmes in the future.

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