Pet Ownership and Adults' Views on the Use of Animals

Deborah L. Wells and Peter G. Hepper
THE QUEEN'S UNIVERSITY OF BELFAST, UNITED KINGDOM

Four hundred and twenty-two adults completed a postal questionnaire in which they provided information regarding pet ownership and their attitudes toward 13 issues involving the use of animals. Over 63% of the sample owned a household pet, with the dog being the most common. Household pets were more commonly owned by respondents who were married, younger than 65 years of age, living in detached houses, or with a child/children present in the home. Most concern was expressed toward those types of animal uses which lead to death or injury, especially dog fighting. Females expressed more disagreement than males with most of the uses of animals examined. Dog owners expressed more approval of fox-hunting and hare-coursing than non-dog owners, and horse owners expressed more approval of fox-hunting than non-horse owners. This study reveals that some of the ways in which people use animals are considered more acceptable than others, and suggests that it is incorrect to group different kinds of animal use into one broad category. The authors argue that future years may see a shift in the way society uses animals, from manipulation toward care for their well-being.

Animals are widely used in today's society. The present study looked at the attitudes of adults toward some of the ways in which animals are used, and investigated the influence of gender, age, and pet ownership on these attitudes.

Britain has always considered itself to be a nation of animal lovers (Clough & Kew, 1993), and indeed this is reflected in the large number of households owning one or more pets. According to a report by the Pet Food Manufacturer's Association (PFMA, 1996), at least 50% of households in the United Kingdom owned one or more pets in 1995. Dogs are owned by 5.2 million households, followed by cats (4.8 million households), fish (2.7 million households), and budgerigars (Australian parakeet, 0.8 million households). Pets are more likely to be owned by households with children or more than four family members (PFMA, 1996), although many demographic variables, including age, socio-economic status, type of housing, and number and age of children play a role in determining who owns a pet (Endenburg, Hart, & de Vries, 1990; Godwin, 1975; Manning & Rowan, 1992; Ory & Goldberg, 1984; Paul & Serpell, 1992).
In addition to the increase in the number of people owning domestic animals, recent years have also witnessed an increase in concern for human-animal relationships (Barba, 1995). This is reflected in the large output of general and scientific literature regarding animal welfare (Broom & Johnson, 1993; Clough & Kew, 1993; Dawkins, 1980), and the development of scales specifically designed to measure attitudes toward and relationships with animals (Bowd, 1984a; Kafer, Lago, Wamboldt, & Harrington, 1992; Lago, Kafer, Delaney, & Connell, 1988; Templer, Salter, Dickey, & Baldwin, 1981).

Many factors are believed to influence attitudes to animals and the ways they are used, including gender (Broida, Tingley, Kimball, & Miele, 1993; Driscoll, 1992; Furnham & Pinder, 1990; Gallup & Beckstead, 1988; Wells & Hepper, 1995), age (Driscoll, 1992), pet ownership (Driscoll, 1992; Furnham & Heyes, 1993; Paul & Serpell, 1993), and, to a lesser extent, residence area (Applegate, 1973; Schole, 1973; Wells & Hepper, 1995), parental attitudes to animals (Schenk, Templer, Peters, & Schmidt, 1994), religious affiliation (Bowd & Bowd, 1989; Driscoll, 1992) and ethnicity (Schenk et al., 1994).

Females from both North America and Britain are reported to express more concern with certain animal welfare issues, such as the use of animals in research, than males (Applegate, 1973; Broida et al., 1993; Driscoll, 1992; Furnham & Pinder, 1990; Gallup & Beckstead, 1988; Herzog, Betchart, & Pittman, 1991; Pifer, Shimizu, & Pifer, 1994; Shaw, 1971; Shaw & Gilbert, 1974). Similarly, both North American and British females are more likely to be members of animal welfare groups than males (Sperling, 1988), to abstain from eating meat or other selected animal produce (Adams, 1990; Herzog et al., 1991; Paul & Serpell, 1993), and to hold more anthropomorphic views regarding animals (Kellert & Berry, 1987). It is suggested that such differences are the result of males and females having different emotional and cognitive orientations toward animals (Kellert & Berry, 1987). Women are described as holding attitudes that are “moralistic” (having strong opposition to the exploitation of animals) and humanistic (having sentimental feelings for animals), while males’ views are utilitarian (viewing animals in terms of their practical and material functions), and “dominionistic” (enjoying the exertion of control over animals, especially in sporting circumstances) (Kellert, 1980; Kellert & Berry, 1987).

Kellert (1980) has also indicated that age may be an important factor in determining attitudes toward animals, with persons under 35 years of age tending to show attitudes that are more “naturalistic” (demonstrating affection for animal life and the outdoor environment) and humanistic, with older persons (over 56)
holding more utilitarian views. Driscoll (1992) also looked at the influence of age on attitudes to animal use and found that adolescents aged between 14 and 19 rated examples of animal research as less acceptable than groups of individuals between 20 and 29, and 50 and 59 years of age.

Closeness to animals, and in particular pet ownership, has been believed since the 18th century to be an important factor in shaping attitudes toward animals. Thomas (1983) pointed out that people who wrote in support of animals in Britain in the 18th century also had close involvement with pets such as dogs and cats. Serpell (1986) and Serpell and Paul (1994) similarly noted that the increase in the popularity of pets in England in the 18th and 19th centuries (due mainly to an increase in British affluence), was an important factor in increased concern for animal welfare. Studies examining the role that pet ownership plays in influencing attitudes toward animals and their use have also pointed out the importance of closeness to pets. Bowd (1984b) concluded that close contact with animals through pet ownership may underlie more positive feelings toward animals. Driscoll (1992) reported that North American pet owners rated examples of animal research as less acceptable than non-owners, while Furnham and Heyes (1993) and Furnham and Pinder (1990) discovered that British dog and cat “lovers” were more opposed to animal experimentation than “non-lovers.” Paul and Serpell (1993) reported that adults who had regular contact with pets during childhood were more likely than adults without such experience to express concern for animal welfare, to be members of animal welfare organizations and/or to be vegetarians, suggesting a role for early experiences in influencing later attitudes.

Despite the fact that animals are used in many ways in today’s society, studies which have examined people’s attitudes toward animal welfare have focused principally on issues of hunting (Applegate, 1973; Floyd, Bankston, & Burgesion, 1986; Schole, 1973; Shaw, 1971; Shaw & Gilbert, 1974), or the use of animals in research (Broida et al., 1993; Driscoll, 1992; Furnham & Heyes, 1993; Furnham & Pinder, 1990; Gallup & Beckstead, 1988; Pifer et al., 1994). In addition, many studies have used either students or persons involved in animal rights movements as their subjects rather than members of the general public (Bowd, 1984a; Broida et al., 1993; Furnham & Heyes, 1993; Gallup & Beckstead, 1988; Herzog et al., 1991).

The study here described, therefore, explored a variety of different uses of animals rather than concentrating solely on hunting or medical research, and examined the attitudes of the general public rather than select groups of the population.
The study had two aims. The first objective was to examine the attitudes of adults in Northern Ireland toward two groups of issues involving the use of animals: the first were those which usually lead to the animal’s death or injury; the second group of issues were those which involve the use of animals but which do not usually lead to death or injury. These issues were chosen on the basis that they all occur in Northern Ireland and would be familiar to participants in the study (Wells & Hepper, 1995). Factors of gender, age, and pet ownership were investigated to see whether they were associated with attitudes toward the listed issues.

A secondary aim of the study was to examine pet ownership across households in Northern Ireland. Factors of gender, age, marital status, type of residence, residence status, and children in the household were examined to see whether they were associated with pet ownership.

"Pet ownership" in the present study was defined as "the possession of a tame or domesticated animal." The term, "pet" was employed instead of "companion animal" since it is debatable whether all types of domestic animals can act as "companions"; the extent to which an animal can provide the social and psychological benefits associated with companionship is largely dependent on the relationship between the human and the animal, and it was not the aim of the present study to collect such information. In this study, "ownership" was considered to be the presence of an animal in the household. Households were adopted as the unit of measure for pet ownership rather than individuals within the household since it is often difficult to attribute pet ownership to one specific person in the household, especially if a pet is originally acquired for a child in the home but is looked after by an adult.

Method

Subjects and Procedure

One thousand members of the population in Northern Ireland were mailed a copy of an “Animal Welfare Survey” in March, 1994. The subjects’ addresses were obtained from the Land Agency in Belfast. The sample represented a proportional random sample of the population of Northern Ireland. Questionnaires were mailed to each of the 26 Local Government Districts in the region. The number sent to each district was in proportion to its population density. Thus more highly populated areas received more questionnaires. Within each area, however, the samples were randomly chosen. Subjects were asked in a cover letter to complete the questionnaire and return it using the provided envelope.
Instrument

The "Animal Welfare Survey" aimed to collect demographic information on the respondents and information pertaining to pet ownership (Section 1), and attitudes toward 13 uses of animals (Section 2).

Section 1 of the instrument collected demographic information regarding the respondent's gender (male; female), age (less than 25; 26-35; 36-45; 46-55; 56-65; more than 65), marital status (married; single; separated or divorced; widowed), type of residence (detached house; semi-detached house; terrace house; apartment), residence status (owner; renter), children in the household (present; absent), and household pet ownership (the type of pet/s owned by any member of the household).

The second part of the Survey consisted of 13 items regarding animal use, to which respondents were required to indicate their degree of accordance (agree or disagree). Two broad categories of issues were the focus of interest in this study. First, those which lead to animal "exploitation" but not usually to death (dog-racing, dog shows, pigeon-racing, horse-racing, show jumping, the use of animals in circuses, and display in zoos). Second, those which usually lead to injury or death (fox-hunting, deer-hunting, hare-coursing, dog-fighting, the use of animals in non-medical research, and the use of animals in medical research). All those issues occur in Northern Ireland and would have been familiar to the respondents. All of the issues had previously been examined in a study of children's attitudes (Wells & Hepper, 1995).

Subjects were asked to indicate whether they agreed (score of 1) or disagreed (score of 2) with each of the listed items. This dichotomous system was used instead of a Likert scale (Bowd, 1984a) in the attempt to force subjects to form a definite decision rather than adopt a non-committal response.

Data Analysis

Demographic information obtained in the study was examined using basic descriptive statistics. Chi-squared tests (Robson, 1973) were employed to examine the association between demographic factors (gender, age, marital status, type of residence, residence status, children in the household), and pet ownership (owner/non-owner, the number of pets owned, the ownership of specific household pets).

A mixed design ANOVA (Howell, 1992) was performed to examine the influence on attitudes toward animal use of the following factors: gender, age, pet ownership, and type of animal use, including "killing/injury" (hunting, hare-
coursing, dog-fighting, the use of animals in medical and non-medical research), and "exploitation" (dog-racing, dog shows, pigeon-racing, horse-racing, show jumping, animals in circuses and zoos).

Finally, chi-squared analyses were used to investigate the association between gender, age, and pet ownership on attitudes toward each specific animal use (agree/disagree for each animal use).

**Results**

**Demographic Information**

Four hundred and twenty-two replies to the original 1,000 questionnaires were received. Information regarding the demographics of participants in the study is presented in Table 1. The sample population is representative of the population of Northern Ireland as indicated by the most recent Northern Ireland Census of Population (1991).

**Pet Ownership**

Thirteen different types of household pets were owned by the participants in the study (see Table 2). Overall, 63.6% of the participants reported that someone in the household owned a pet, with the dog being the most commonly owned animal. Since so few respondents reported owning rabbits, hamsters, gerbils, lizards, terrapins, mice, guinea-pigs, or tortoises, these animals were combined together into the category of "small pet" for any subsequent analyses involving pet ownership.

Of subjects owning a household pet, most (53.2%) owned a single type of pet, 34.6% owned two types of pet, 10.8% owned three types of pet, and 1.5% owned four types of pet.

**Factors affecting pet ownership** – Factors of age, marital status, type of residence, and children in the household were all significantly associated with pet ownership (see Table 1). Individuals over the age of 65 were less likely to own a pet than younger persons. Similarly, widowed persons were found to be less likely to own a pet than those who were married, single, or separated/divorced. Results revealed that people who resided in a detached house were more likely to be pet owners than those who lived in other types of accommodation, especially apartments. Finally, more of those respondents with children present in the home were revealed to be pet owners than those without children present.
Factors affecting the number of pets owned — None of the factors were found to be significantly associated with the number of pets owned by pet owners.

<table>
<thead>
<tr>
<th>Demographic Factor</th>
<th>All</th>
<th>Pet owners</th>
<th>χ²</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>202</td>
<td>128</td>
<td>0.003</td>
<td>1</td>
<td>n.s.</td>
</tr>
<tr>
<td>female</td>
<td>220</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (in years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25</td>
<td>54</td>
<td>35</td>
<td>11.05</td>
<td>5</td>
<td>0.05</td>
</tr>
<tr>
<td>26-35</td>
<td>89</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36-45</td>
<td>85</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46-55</td>
<td>74</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56-65</td>
<td>61</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;65</td>
<td>59</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>married</td>
<td>244</td>
<td>167</td>
<td>8.77</td>
<td>3</td>
<td>0.03</td>
</tr>
<tr>
<td>single</td>
<td>97</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>widowed</td>
<td>41</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>separated/divorced</td>
<td>40</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>present</td>
<td>211</td>
<td>156</td>
<td>18.32</td>
<td>1</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>absent</td>
<td>211</td>
<td>113</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>detached</td>
<td>160</td>
<td>119</td>
<td>21.47</td>
<td>3</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>semi-detached</td>
<td>119</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>terrace</td>
<td>113</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>apartment</td>
<td>30</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residence status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>owner</td>
<td>306</td>
<td>194</td>
<td>0.85</td>
<td>1</td>
<td>n.s.</td>
</tr>
<tr>
<td>renter</td>
<td>116</td>
<td>68</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Facts affecting the number of pets owned — None of the factors were found to be significantly associated with the number of pets owned by pet owners.
Factors affecting the ownership of specific pets – Information regarding which factors were significantly associated with the ownership of specific pets is presented in Table 3. As can be seen, both dog and cat ownership were found to be related to type of residence, with more of those respondents living in detached houses owning such a pet than those living in other forms of accommodation, especially apartments. Fish and small pet ownership were both associated with children. More of those households with children tended to own fish and small pets than those without children present. Analyses for horse ownership were not carried out since so few respondents owned a horse (n=14), thus rendering any chi-squared results invalid. The extent to which a horse can be considered a household pet is also questionable.

Attitudes toward the Use of Animals

Twelve respondents did not indicate their degree of accordance toward any of the 13 animal-use issues and were consequently omitted from analysis. The subject count for the ANOVA was therefore 410. Only significant effects arising from the ANOVA are reported.
There was a significant effect of gender \( (F[1,386]=6.33, p<0.02) \). Males expressed more agreement with the use of animals overall (mean=1.5, s.d=0.19) than females (mean=1.57, s.d=0.20).

There was a significant effect of animal use \( (F[1,386]=1206.41, p<0.0001) \). More respondents disagreed with uses leading to an animal’s death or injury (mean=1.8, s.d=0.27) than those involving their exploitation (mean=1.28, s.d=0.19).

---

**Table 3. The total number and percentage of respondents owning specific household pets according to factors of type of residence, and children in the household.**

<table>
<thead>
<tr>
<th>Demographic Factor</th>
<th>Pet owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of residence</td>
<td>n</td>
</tr>
<tr>
<td>Dog ownership</td>
<td></td>
</tr>
<tr>
<td>detached</td>
<td>91</td>
</tr>
<tr>
<td>semi-detached</td>
<td>47</td>
</tr>
<tr>
<td>terrace</td>
<td>50</td>
</tr>
<tr>
<td>apartment</td>
<td>8</td>
</tr>
<tr>
<td>( \chi^2=14.25, \text{ df}=3, p=0.002 )</td>
<td></td>
</tr>
<tr>
<td>Cat ownership</td>
<td></td>
</tr>
<tr>
<td>detached</td>
<td>54</td>
</tr>
<tr>
<td>semi-detached</td>
<td>25</td>
</tr>
<tr>
<td>terrace</td>
<td>24</td>
</tr>
<tr>
<td>apartment</td>
<td>4</td>
</tr>
<tr>
<td>( \chi^2=10.35, \text{ df}=3, p=0.01 )</td>
<td></td>
</tr>
<tr>
<td>Children in the household</td>
<td></td>
</tr>
<tr>
<td>Fish ownership</td>
<td></td>
</tr>
<tr>
<td>present</td>
<td>40</td>
</tr>
<tr>
<td>absent</td>
<td>15</td>
</tr>
<tr>
<td>( \chi^2=12.93, \text{ df}=1, p&lt;0.001 )</td>
<td></td>
</tr>
<tr>
<td>Small pet ownership</td>
<td></td>
</tr>
<tr>
<td>present</td>
<td>21</td>
</tr>
<tr>
<td>absent</td>
<td>2</td>
</tr>
<tr>
<td>( \chi^2=16.50, \text{ df}=1, p&lt;0.001 )</td>
<td></td>
</tr>
</tbody>
</table>
There was a significant interaction between age and pet ownership \((F[5,386]=2.69, p<0.05)\). Post hoc tests revealed that pet owners under the age of 25 (mean=1.58, s.d=0.18), and between 26-35 years (mean=1.58, s.d=0.18) disagreed significantly more \((p<0.05, \text{ simple effects test})\) with the use of animals than non-owners under the age of 25 (mean=1.50, s.d=0.16), and between 26-35 years (mean=1.49, s.d=0.18). Pet owners over the age of 65 years, however, disagreed significantly less \((p<0.05, \text{ simple effects test})\) with the use of animals (mean=1.50, s.d=0.23) than non-owners over the age of 65 years (mean=1.60, s.d=0.18). Pet owners aged between 36-45, 46-55, and 56-65 years did not differ significantly \((p>0.05, \text{ simple effects test})\), compared with non-owners of the same ages, in their attitudes toward the use of animals.

There was a significant 3-way interaction between gender, pet ownership, and type of animal use \((F[1,386]=7.13, p<0.005)\). Male and female pet owners and non-owners expressed equal concern about animal uses leading to an animal’s death or injury (mean=1.8, s.d=0.02). Male pet owners, however, expressed less concern toward animal uses leading to animal exploitation (mean=1.2, s.d=0.2) than male non-owners (mean=1.3, s.d=0.3), female pet owners (mean=1.3, s.d=0.3) or non-owners (mean=1.3, s.d=0.3).

In order to assess the amount of variability accounted for by each of the significant effects, omega-squared \((\omega^2)\) was calculated (Howell, 1992) for each of the significant effects. This revealed that a large amount of variance was accounted for by the factor of type of animal use \((\omega^2=0.74)\), but very little by the factor of gender \((\omega^2=0.01)\), the interaction between factors of pet ownership and age \((\omega^2=0.004)\), or the interaction among factors of gender, pet ownership, and type of animal use \((\omega^2=0.01)\).

Examination of the animal use issues separately revealed dog-fighting to be the most highly disapproved use, closely followed by hare-coursing (see Table 4). Dog shows raised the least disapproval, closely followed by both pigeon-racing and show jumping.

Chi-squared analyses were used to further investigate the association between gender, age, and pet ownership on attitudes toward each specific animal use.

The mean agreement/disagreement scores for males and females for each use can be seen in Table 4. Females expressed more disagreement than males over issues of fox-hunting, deer-hunting, dog-racing, pigeon-racing, horse-racing, and the use of animals in circuses.

A significant association was revealed between pet ownership and attitudes toward the use of animals in medical research (see Table 4). More pet owners disapproved with this use than non-owners.
When the type of pet owned was examined individually, a significant association was found between dog ownership and attitudes toward fox-hunting ($\chi^2=7.48$, df=1, $p=0.006$), with more dog owners (22.8%) approving of the sport than non-owners (12.4%). Significant associations were also revealed between dog ownership and hare-coursing ($\chi^2=3.98$, df=1, $p=0.004$), again, with more dog owners approving of the sport (9.3%) than non-owners (4.3%). Dog owners also showed significant association on the question of the use of animals in medical research, ($\chi^2=7.0$, df=1, $p=0.008$), this time with more dog owners disagreeing (63.9%) than non-owners (42.3%). A significant association was also found between horse-ownership and fox-hunting ($\chi^2=21.78$, df=1, $p=0.001$). More horse owners approved of fox-hunting (64.3%), than non-owners (15.9%).

Age was not found to be significantly associated with any of the listed issues.
Discussion

Pet Ownership

The majority of subjects in this study owned a household pet, with the dog being the most popularly owned animal, followed by the cat, and fish (see Table 2). Very few of the subjects owned other types of animals, supporting work by Godwin (1975), PFMA (1996), and Wells & Hepper (1995) in revealing dogs and cats to be much more commonly owned than other household pets.

Married individuals were slightly more likely to own a pet than persons of other marital status, presumably because they are more likely to have a settled lifestyle. This confirms studies of Endenburg et al. (1990) in the Netherlands, and Marx, Stallones, Garrity, and Johnson (1988) in the United States. In another North American study, (Albert & Bulcroft, 1987), remarried respondents were found to be more likely to own a pet. Widowed individuals in the present study were much less likely to own a pet than persons of other marital status. Since widows generally tend to be older than individuals of other marital status, the age factor may interact with marital status to exert an effect on pet ownership.

Persons over the age of 65 years were much less likely to own a pet than younger individuals. Messent and Horsfield (1985) concluded that the factor of age per se, had very little influence on the ownership of pets whenever other variables such as children in the household or type of residence were also taken into consideration. It seems probable here that similar demographic variables, e.g., children in the home and type of residence, were contributory factors to the significant “age effect” revealed in the present study.

The presence of a child in the home was found to be associated with pet ownership, with pets being owned by more subjects with a child present in the home than without. This finding supports work conducted in North America by Albert and Bulcroft (1987), and Marx et al. (1988), and work in The Netherlands by Endenburg et al. (1990). All studies found pet ownership to be higher among households with children present. While this finding suggests that pets are bought specifically for the children in families rather than the adults, the situation may not be that straightforward. Messent and Horsfield (1985) argue that the number of people present in the household as opposed to the presence of children may be a more important factor shaping pet ownership. Although Messent and Horsfield (1985) are only concerned with the ownership of dogs and cats, their findings are of importance to studies of pet ownership in general, since they emphasize the fact that with a large number of people present in the household there is a greater chance
of someone owning a pet, irrespective of whether or not a child is present in the home.

Findings from the present study also revealed the presence of a child in the home to be associated with the ownership of specific types of pet. Fish and small-pet owners were more likely to have a child in the home than non-owners. Endenburg et al. (1990) reported that rodent and rabbit owners in the Netherlands were more likely to have a child in the home than non-owners, supporting the ownership of small pets by children. Paul (1992) has pointed out that domestic pets such as fish and small mammals are more likely to be owned by children than are animals such as dogs, cats, or horses, since they are small, inexpensive and have a short lifespan. This would explain why fish-owners were more likely to have a child in the home than non-owners while no differences were found for pets such as the dog or cat. This does not, however, explain why no such differences were found for pets such as gerbils, mice, hamsters, etc., although small numbers may have precluded the finding of significant results.

Those persons living in a detached house were more likely to own a pet than were persons residing in other types of accommodation, probably because space is less limited in detached houses compared to semi-detached houses or apartments. Results from other studies are somewhat conflicting. Findings similar to those in the present study have been reported from North America, (Friedmann, Katcher, Eaton, & Berger, 1984; Ory & Goldberg, 1984), and from The Netherlands (Endenburg et al., 1990). In another North American study, however, Albert and Bulcroft (1987) reported type of residence to be unrelated to overall pet ownership. Messent and Horsfield (1985) point out that a person’s age is usually related to type of accommodation, with older persons tending to reside in smaller houses and apartments than younger individuals. Type of accommodation may therefore interact with other demographic variables to exert an effect on pet ownership.

Type of residence was not only found to be associated with overall pet ownership, but also with the ownership of specific types of pets. Dog and/or cat owners were more likely to live in a detached house than any other type of accommodation, again probably due to the fact that detached houses have more space available to accommodate such relatively large pets. Albert and Bulcroft (1987) and Endenburg et al. (1990) similarly found that more dog owners in North America and The Netherlands, respectively, lived in houses than apartments, although they found no difference in type of accommodation for cat owners. The results from this study did not support either PFMA’s (1996) findings that among the British, fish were more likely to be owned by people in semi-detached dwellings, and budgerigars by persons in semi-detached or terraced housing, or the
Endenburg et al. (1990) report that Dutch owners of rodents were more likely to live in semi-detached houses.

**Attitudes toward Animal Use**

On examination of the issues involving animal use, participants were found to express more concern about those activities that usually lead to an animal’s death or injury (hunting, hare-coursing, dog-fighting, medical and non-medical research), than about those which do not result in the same amount of animal suffering (dog-racing, dog shows, pigeon-racing, horse-racing, show jumping, the use of animals in circuses, and in zoos). Previous research has not addressed the distinction between these two issues in adults, although Wells and Hepper (1995) found that children showed extremely similar views to those of the adults in the present study. Since the amount of agreement/disagreement adults displayed was different for each issue, it is important for future research to consider each animal use separately rather than consider all uses of animals together and as equally agreeable or disagreeable.

Individual analysis of the animal uses revealed that adults, just like children (Wells & Hepper, 1995) disapprove most of dog-fighting. This finding may be due to the attention which this sport has received in the media in the United Kingdom since the introduction of the Dangerous Dogs Act (1991). In addition, and perhaps more importantly, dog-fighting is the only animal use issue in the study that is illegal. Undoubtedly, people are more likely to express disapproval toward an activity which is prohibited, even if they do actually approve of it.

A large proportion of adults (87.1%) were found to be opposed to both fox- and deer-hunting. Studies among adults in North America, however, have revealed lower concerns about hunting. Shaw and Gilbert (1974), for instance, found that only 15% of male college students and 24% of their female counterparts were totally against hunting, and Applegate (1973) discovered that only 38% of New Jersey residents disapproved of deer-hunting. Although there have been no similar studies examining attitudes toward hunting in Britain, concern about issues related to animal rights as a whole in the United Kingdom tend to be higher than in the United States (Pifer et al., 1994) which could explain why a higher proportion of subjects in the present study were found to be opposed to hunting than in the North American studies. It is also likely that personal experience of hunting in the United Kingdom is lower than it is in the United States. Furthermore, the American studies were carried out 20 years ago, since which time the animal rights movement has grown dramatically.
Participants expressed concern over the use of animals in circuses despite the fact that this was included in the "exploitation" rather than the "killing/injury" category for analysis. This finding is perhaps not too surprising given the violent history which the training of animals for circuses is reported to have (Clough & Kew, 1993).

Adult males were found to disagree less with the use of animals than adult females, supporting work by Broida et al. (1993), Driscoll (1992), Furnham and Pinder (1990), and Gallup and Beckstead (1988). Wells and Hepper (1995) report a similar gender difference between male and female children. The effect of gender on attitudes to animal exploitation may be result of differences in cognitive and emotional orientations between males and females (Kellert & Berry 1987).

Pet ownership as a whole was only found to be associated with attitudes toward the use of animals in medical research, with pet owners expressing more disagreement with animals used in this way than non-owners. This supports Driscoll (1992) who reported that pet owners approve less of the use of animals in research than non-owners. Interestingly, there was no difference in the attitudes of owners and non-owners toward the use of animals in non-medical research, with both groups viewing it unfavorably. Wells and Hepper (1995) did not find pet ownership to influence children's attitudes toward different uses of animals, although they stressed that the high incidence of pet ownership in the study group (90.7%) made assessment of the effects on non-pet ownership difficult. Pet ownership in the present study was also high. The relatively low response rate (42.2%), and the fact that the number of respondents owning a pet (63.6%) was much higher than the national average (50%) suggests that the sample of participants may be somewhat biased in the direction of "animal lovers." Results regarding the influence of pet ownership on attitudes to animal use should be interpreted with this in mind, since one might expect those people who own pets also to show more concern for animal welfare.

It appeared that the ownership of specific types of pet had some influence on attitudes to animal use, especially toward the use of animals similar to those already owned. Thus, dog owners showed more approval of sports involving dogs (fox-hunting, hare-coursing), and horse owners expressed more approval of sports employing the use of horses (fox-hunting).

The extent to which pet ownership may influence a person's attitudes toward the use of animals may be related to the age of the pet owner. Results suggest that the presence of a pet in the household may exert an influence on owners' perceptions of animal welfare, with younger pet owners being more positively influenced than older owners.
Although factors of gender, age, pet ownership, and type of animal use were found to be related to attitudes toward the use of animals, together, these variables only accounted for less than 1% of the variance in attitudes. Driscoll (1992) similarly found that factors of gender, religious affiliation, and pet ownership only accounted for under 5% of variability in attitudes toward the use of animals, while Wells and Hepper (1995) reported that gender and residence area together accounted for less than 4% of variability in children's attitudes toward the use of animals. Demographic factors alone will never provide full information on human-animal relations (Messent & Horsfield, 1985). Many other factors are likely to influence an adult's attitudes toward animal use, such as childhood pet ownership (e.g., Serpell, 1981) and the quality of one's relationships with pet animals (Paul & Serpell, 1993).

Conclusions

Animals are used in many ways in today's society. The results of this study reveal that adults' opinions and approval/disapproval of the use of animals depends on the specific use of the animal under consideration. Different uses of animals are associated with different attitudes. The same individuals approve of some uses of animals (racing or showing animals) but disapprove of others (hunting, circuses). The results of this study suggest that it is incorrect to group different uses of animals together, since some of the ways in which animals are used are viewed as more acceptable than others. While the use of animals for companionship appeared to be very acceptable (given the large number of subjects owning a household pet), the use of animals for activities that usually result in their death or injury was deemed highly unacceptable. Adults' attitudes toward the use of animals were found to be influenced slightly by gender and type of household pet owned, although demographic factors may not be as important in influencing attitudes toward animal use as are other factors such as previous experience and quality of relationships with animals. The relatively high level of concern expressed for the use of animals in the present study suggests that future years may see a shift in the way society uses animals, away from their manipulation and toward care for their well-being.

Note

Correspondence should be sent to Peter Hepper, School of Psychology, The Queen's University of Belfast, Belfast, BT7 1NN, N. Ireland, UK. We would like to thank Professor K. Brown, School of Psychology, for providing the facilities to enable this research to be
undertaken, and the Valuation and Lands Agency, Belfast, for providing the addresses of the sample used in this study. Deborah Wells acknowledges the support of NIdevR/ESF.

References


