

THE BEHAVIOUR OF DOGS IN A RESCUE SHELTER

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Abstract

Every year sees an increase in the number of dogs admitted to rescue shelters. However well these dogs are cared for in the shelter it cannot be ignored that being in such a situation is stressful, and the time spent in the shelter may change the dogs' behaviour which may in turn influence their chances of being bought from the shelter. This research examined the behaviour of stray and unwanted dogs on their first, third and fifth days in an Ulster Society for the Prevention of Cruelty to Animals (USPCA) shelter. A questionnaire was also distributed to members of the public to determine how popular the USPCA was as a place from where to purchase a dog, and what factors about a dog's physical characteristics, behaviour and environment influenced potential buyers. Results revealed no significant difference between the behaviour of stray and unwanted dogs although the public viewed stray dogs as much less desirable than unwanted dogs. Time in the shelter had no adverse effects on the dogs' behaviour. Indeed those changes which did occur during captivity, dogs being more relaxed in the presence of people and eating food more quickly, may be considered as positive changes. The USPCA was viewed as a popular place from which to buy a dog. Of factors influencing the public's choice, the dog's environment and behaviour appeared more important than its physical characteristics. The presence of a toy in the dog's cage greatly increased the public's preference for the dog, although the toy was ignored by the dog. The welfare implications of sheltering dogs are discussed.

Keywords: *animal welfare, behaviour, captivity, dogs, dog shelters, USPCA*

Introduction

'Dog is man's best friend!'

Each year increasing numbers of dogs are discarded by their owners and end up in the local dog shelter. They are kept for a short period of time with the hope that they will be reclaimed or bought by a new owner but more often are destroyed. This paper examines the behaviour of dogs during the time they are held in the shelter.

In Northern Ireland, shelter is provided by the Ulster Society for the Prevention of Cruelty to Animals (USPCA). In the calendar year 1990, 18,843 dogs were brought into the USPCA's shelters; 10,210 were stray dogs, that is dogs who were found roaming the streets, 5,056 were unwanted dogs, that is dogs who were handed into the shelter by their owners and 3,577 were humanely destroyed at the owner's request. Legally, stray dogs

must be kept for a minimum of 6 days by the shelter before they may be acquired by new owners (although they may be chosen prior to this time they cannot be collected from the shelter until 6 days have elapsed) or are destroyed. Stray dogs may be kept for longer but the large number of dogs requiring shelter and the limited resources available to house them means that if not claimed by 6 days they will be humanely destroyed. Unwanted dogs, since they are handed in by their owner, may be destroyed immediately, although in practice these too may remain for up to 6 days to see if a new home can be found.

Although the dogs are well cared for in the shelter, the situation is unfamiliar and possibly stressful and consequently their time in the shelter may adversely affect their behaviour. Obviously, inducing abnormal behaviour in the dog is bad for the welfare of the dog itself. Furthermore aberrant behaviour may have important implications for their futures, making the dogs less attractive to potential buyers who visit the shelter.

The effects of captivity have received much attention since original studies by Hediger (1950, 1955). It is now realised that keeping animals in small, uninteresting cages or environments can induce abnormal and aberrant behaviour (Dittus 1979, Fox 1968, Lorenz & Mason 1971, Morris 1964, Poole 1988, Redshaw & Mallinson 1991, Stevenson 1983, Wemelsfelder 1984) and many attempts to improve well-being by enriching the environments with the provision of extra stimulation have been undertaken and proved successful, eg Beaver (1989), Bloomstrand *et al* (1986), Markowitz (1982), Naish (1982), Snyder (1977). The effects of short-term captivity, however have not been given the same attention.

The behaviour of dogs has been the subject of intermittent interest. Some have studied the behaviour of wild canids in their natural environment, eg Kruuk (1972), Kuhme (1965), Mech (1970). Others have looked at domestic dogs, whilst early studies focused on the 'critical period' for socialization (Freedman *et al* 1961, Scott 1957) more recent studies have looked at kinship (Hepper 1986) and maternal behaviour (Wilsson 1984). Although there is a need for more scientific study of the behaviour of domestic dogs, that which has taken place indicates, very generally, that the dog is a social animal which likes to roam freely over a large area (Fox 1971, Macdonald & Moehlman 1982). It may be expected therefore that to be housed singly in a small cage will exert an adverse influence on the behaviour of the dog.

The first part of this study described the behaviour of dogs in a USPCA shelter to determine whether the time spent in captivity affected their behaviour and whether the behaviour of stray and unwanted dogs differed. Given the very different immediate backgrounds of stray and unwanted dogs, the former found on the streets, the latter handed in by its owner, they may respond very differently to their time in the shelter. The behaviour of the dogs over a six hour period and in response to food, an unfamiliar person and a novel stimulus was assessed. By obtaining information regarding the behaviour of sheltered dogs, problem areas may be identified for which remedial steps may be undertaken making the dogs more likely to be chosen from the shelter.

The second part of the study examined by questionnaire, the popularity of the USPCA as an organization from which to purchase a dog and to determine what characteristics of dogs and their environment attract or deter a potential buyer. The questionnaire responses were compared against the USPCA records for the month of July 1991 in order to see whether factors influencing the public's responses were reflected in the types of dogs actually sold from the shelter.

Experiment 1: the response of dogs to food, to an unfamiliar person and to a toy

Dogs when taken to the shelter are housed singly in two rows of cages, 29 cages per row, with a central aisle for shelter staff to conduct maintenance duties. Each cage is approximately 1m wide, 4m long and 2m high and consists of a metal back door leading to the central aisle, a wire mesh front and two concrete walls and floor. The view out of the wire mesh is of a concrete walled alley down which members of the public may walk. The dogs had hard plastic beds which were removed in the morning and returned in the afternoon; they had no bedding.

Temperature during the study period ranged from very hot (c 35°C) to cool at night (c 0°C), fans in the central aisle were used to reduce temperature when it became too hot. Every morning the cages are power-hosed clean, requiring staff to move each dog into a freshly cleaned cage, thus the dogs do not get accustomed to one location during their stay in the shelter.

Every dog is kept in such a cage for 24 hours a day and only leaves when sold or destroyed. In the cages, the dog can hear just about everything that goes on in the shelter, but they see no form of life except for the public when they walk past the cage front or when the workers at the shelter perform their duties, either cleaning or feeding.

This environment, both its physical structure and routine, is undoubtedly very different to that previously experienced by the dogs and may change their behaviour, adversely affecting their welfare. It is in these cages that the public see the dogs with a view to possible purchase thus their behaviour in these cages may critically affect the public's opinion of the dogs.

Subjects

Sixty dogs of mixed gender and age were randomly chosen on the day of their admittance to the shelter (day 1); 30 of these dogs were strays and 30 were unwanted. Twenty dogs, 10 stray and 10 unwanted, were used in each of the following experiments (1a-1c). Each experiment took place during a 7 day period, starting on Monday and ending on Sunday, on consecutive weeks during August 1991. Observations were conducted by a single observer (DW). A timer was used to time the length of trial in each experiment and a stopwatch was used to time feeding in experiment 1a.

Experiment 1a: the feeding behaviour of dogs

This experiment examined the feeding behaviour of stray and unwanted dogs, and whether feeding behaviour changed significantly over the 5 days spent in captivity. Feeding behaviour is influenced by stress and thus may serve as an indicator of well-being. It was assessed by recording the time taken by the dogs to eat their food.

Procedure

A trial (duration 10min) began when a bowl of food was placed in the cage of the dog. The experimenter, observing from a small window at the back of the cage, recorded the time taken by the dog to eat its food. This was calculated from the time when the dog first ate from the dish until it finished or when the 10 minute trial was over.

All observations were made between 1530h and 1615h on the subjects' first, third and fifth days of captivity in the shelter. The results were analyzed by Analysis of Variance (ANOVA) with one between subject factor, type of dog (stray, unwanted) and one within subject factor, day of captivity (day 1, day 3 or day 5). All dogs who ate nothing, were given a time of 10 minutes (600 s).

Results

The ANOVA indicated a significant effect of day of captivity ($F[2,36]=10.489$, $p<0.001$). *Post hoc* Newman-Keuls tests revealed that dogs took longer to eat food on their first day of captivity but were much quicker ($p<0.01$) on days 3 and 5 (see Table 1a). There was no significant effect on the type of dog ($F[1,18]=0.188$, $p=0.67$) or any interaction ($F[2,36]=0.088$, $p=0.915$).

Table 1a The mean time in seconds (+/- standard error) taken to eat food on each day of testing.

	Day 1	Day 3	Day 5
<i>Response of dogs to food</i>	388(54)	191(28)	228(33)

Discussion

The dogs' behaviour in response to food changed over the course of the 5 days in captivity, namely the dogs ate their food more quickly and became much less hesitant about feeding. The greater amount of time spent feeding on day 1 may be related to the unfamiliarity of the environment and possibly the food, by day 3 however, most dogs had become accustomed to their new surroundings and feeding regimen and now ate more quickly. There were no differences between the behaviour of stray and unwanted dogs. One may have expected stray dogs to show a more immediate response to the food than their unwanted counterparts especially on day 1, since they were found roaming the streets and hence may have been hungrier than unwanted dogs. However no such differences were observed.

Experiment 1b: the response of dogs to an unfamiliar person

Given that the dog's response to potential purchasers who look into the cage may determine whether it is bought or not, the behaviour of dogs on seeing an unfamiliar individual should be carefully considered.

Procedure

A trial began when the experimenter, acting as an unfamiliar person, walked to the front of the subject's cage, ie where the public walk, and stood for a period of 5 minutes and recorded the behaviour of the dog. Dogs were all resting but awake at the start of each trial and the experimenter did not respond to them during the period of observation. Dogs were classified into one of three categories dependent on their behaviour. Those oblivious to the presence of the unfamiliar person and which continued to rest or ignore the experimenter for the majority of the observation period were classified as *Disinterested*. *Inquisitive* dogs were those that spent the majority of the testing time sitting or standing quietly looking at the unfamiliar person, often coming to the front of the cage to be petted. Dogs which spent the majority of the 5 minute period barking, whining, jumping and/or pacing the length of the cage were classified as *Agitated*.

All observations were performed between 1530h and 1615h on the subjects' first, third and fifth days of captivity. For the purposes of analysis dogs classified as *Disinterested* were given a score of 1, *Inquisitive* a score of 2 and *Agitated* a score of 3. A Mann Whitney U test was used to compare the behaviour of stray and unwanted dogs on each day of testing and a Friedman one-way ANOVA used to assess the effects of time in captivity.

Results

There were no significant differences between the behaviour of stray and unwanted dogs on each day of testing (day 1, $p=0.681$; day 3, $p=0.241$; day 5, $p=0.970$) in response to the presence of an unfamiliar person. As there were no differences between stray and unwanted dogs the data were combined for the Friedman ANOVA. This revealed a highly significant effect of time in captivity ($X^2 [2]=7.86$, $p=0.02$) on the behaviour of the dogs (see Table 1b).

Table 1b The mean scores (+/- standard error) of behavioural response to the unfamiliar person on each day of testing.

	Day 1	Day 3	Day 5
<i>Response of dogs to person</i>	2.25(0.19)	1.85(0.21)	1.55(0.19)

Discussion

There was a significant change in behavioural response of dogs to the presence of an unfamiliar person over the duration of their captivity. On the first day of captivity the

dogs became agitated when an unfamiliar person looked into the cage but by day 5 they behaved in a relaxed manner to the presence of an unfamiliar person. This change may be due to the dogs becoming familiar with their new surroundings and/or the presence of people looking at them through the front of the cage.

Although the dogs' behaviour changed during captivity this change seemed to be positive. The majority of dogs became more relaxed as the time spent in confinement increased and showed more interest in people which may be beneficial for their prospects of being adopted. It should be noted that there were no differences between the behaviour of stray and unwanted dogs.

Experiment 1c: the response of dogs to a novel stimulus in their cages

Dogs denied the opportunity to play may become disturbed through lack of sensory and mental stimulation leading to behavioural problems, however these may be prevented by the provision of an appropriate toy for the animal (Markowitz 1982). The behaviour displayed by stray and unwanted dogs in response to the presence of a novel stimulus, and whether these behaviours would change during captivity was examined here. The novel stimulus used in this experiment was a '*Kong Ball*', (supplied by the Company of Animals, Chertsey, Surrey), which is made of natural rubber and strong enough to withstand constant chewing by the dog. Rather than a ball, the kong is essentially a tube made of three rings of decreasing size placed on top of one another, thus it is wider at the bottom than at the top. This asymmetry gives it an unpredictable bounce which makes it a superb exercise and fetch toy.

Procedure

A trial began when the experimenter attracted the dog's attention by saying 'hello boy/girl', and the kong ball was then thrown into the cage in such a way that it bounced. The experimenter then recorded the subject's behaviour for the next 5 minutes, viewing the behaviour from a small window at the back of the cage out of sight of the dog. Responses to the ball were classified into one of three categories. Dogs that showed absolutely no interest in the ball and generally continued to behave as they had before it was introduced to the cage were classed as *Ignorers*. Dogs who initially approached the ball usually sniffing it for several seconds but then showed no interest in it were classed as *Approachers*. Finally dogs who responded to the ball, pawed it, picked it up and/or chewed it were classified as *Responders*. All observations were made between 1530h and 1615h on the subjects' first, third and fifth days of captivity.

For analysis dogs classified as *Ignorers* were given a score of 1, *Approachers* a score of 2 and *Responders* a score of 3. A Mann Whitney U test was used to compare the behaviour of stray and unwanted dogs on each day of testing and a Friedman one-way ANOVA used to assess the effects of time in captivity.

Results

There were no significant differences between the response of stray and unwanted dogs to the novel stimulus on any day of testing (day 1, $p=0.592$; day 3, $p=0.861$, day 5, $p=0.622$). As there were no significant differences between the results from the stray and unwanted dogs they were combined for the Friedman ANOVA. There was no significant effect of the time of captivity on the response ($X^2[2]=1.04$, $p=0.595$), see Table 1c.

Table 1c The mean scores (+/- standard error) of behavioural response to a novel stimulus on each day of testing.

	Day 1	Day 3	Day 5
<i>Response of dogs to toy</i>	1.50(0.25)	1.75(0.31)	1.60(0.28)

Discussion

There were no differences in the response of stray and unwanted dogs nor any change in their response during confinement to the novel object. Indeed the majority totally ignored the ball's presence. At first glance this result is somewhat surprising because according to the manufacturers, the 'kong is guaranteed fun!'. The dogs may have been under too much stress to be interested in the toy, although the results from the previous experiments suggest this decreased during their period of captivity. The absence of interest may reflect the fact that the dogs may have had previously little experience with toys or that there was no one to throw the toy to induce play.

Experiment 2: the behaviour of dogs over a 6 hour period

This experiment examined the behaviour of stray and unwanted dogs over a 6 hour period and whether these behaviours changed during captivity. Observations were carried out during the time the shelter was open to the public and thus documents the behaviour of dogs as observed by potential owners.

Subjects

Ten dogs of mixed gender and age were randomly chosen on their first day in the shelter. Three of the dogs were unwanted dogs, whilst the remaining seven were stray dogs. Given the lack of differences between the behaviour of stray and unwanted dogs in the preceding studies it was felt satisfactory to combine the two categories for this study.

Procedure

To document the behaviour of the dogs, observations were made every ten minutes for a 6 hour period. All observations started at 0950h and ended at 1550h and were made over a 1 week period at the end of August 1991. The experimenter moved to the subject's cage (as quietly as possible so as not to interfere with the dog's behaviour at that time) and noted what the subject was doing. This was repeated every ten minutes.

At each observation behaviour was classified into one of four activities. These were *Sleeping* (the dog was asleep), *Resting* (the dog was awake but lying down, not at the front of the cage), *Sitting* (the dog was sitting or standing at the front of the cage) or *Active* (the dog was moving around the cage). Each day the number of times a dog was reported in each behaviour category was summed and the results analyzed by ANOVA with two within subject factors; activity (*Sleep, Resting, Sitting, Active*) and the day of captivity (days 1, 3 or 5).

Results

The ANOVA revealed a highly significant effect of activity ($F[3,27]=10.093$, $p<0.0001$), *post hoc* Newman-Keuls tests revealed that dogs spent a significantly ($p<0.01$) greater time *Resting* than *Sleeping, Sitting* or *Active* (see Table 2). There was obviously no significant effect of the day of captivity since there were an equal number of observations each day and no interaction between the two factors ($F[6,54] = 0.796$, $p = 0.58$).

Table 2 The mean number of times (+/- standard error) that dogs were observed in each behavioural category on each day of testing.

Behavioural category	Day 1	Day 2	Day 5
<i>Sleep</i>	4(1)	4(1)	3(1)
<i>Active</i>	5(1)	6(2)	6(1)
<i>Resting</i>	17(3)	19(3)	20(3)
<i>Sitting</i>	11(2)	8(2)	8(2)

Discussion

It should not be surprising that the dogs spent significantly more time resting (inactive but awake). The kennels provide little in the way of novel stimulation and many dogs while away time lying at the back door. There, they can hear (but not see), all that the staff are doing. They may also feel more secure in this area, surrounded by three solid walls, rather than at the front of the cage where it is more open.

Although the subjects spent such a large proportion of their time resting, very little was actually spent sleeping (see Table 2) during the 6 hour observation period. This may result from the high noise level prevalent in the kennels. Not only is there a continuous peal of barking from the dogs, but noise is also made by the staff as they perform their maintenance duties. Importantly, the behaviour of dogs did not change over time, indicating that the short period of captivity does not alter the behaviour patterns of the dogs.

Overall the above observations indicate that dogs displayed little in the way of behavioural change during captivity suggesting that the time in the shelter did not adversely affect their behaviour. That which did occur, ie eating more quickly and becoming more relaxed in the presence of an unfamiliar person, could not be considered

as adverse and from a welfare point of view, is probably beneficial. It is possible however that more people would prefer to buy a dog which is active rather than seemingly listless, so by resting at the back of the cage rather than being at the front of the cage where they can be seen, the dogs may actually be jeopardizing their chances of being bought. Factors influencing the choice of dogs were examined in experiment 3.

Experiment 3: factors influencing the purchase of dogs

This experiment examined the popularity of the USPCA as an organization from which to purchase a dog and to ascertain what characteristics of particular dogs and their environment attract potential buyers. Any factors which may dissuade a person from buying a particular dog have important implications, by finding out what these factors are, it may be possible to change them, and perhaps increase the USPCA's popularity and sale of dogs.

Subjects and apparatus

One hundred members of the general public took part in the experiment. The subjects varied in their age (18-64, mean 34), sex (50 females and 50 males) and socio-economic level (I-3, II-26, III-43, IV-20, V-8), and were broadly representative of the population as indicated by the Northern Ireland Census of Population (1981). Each subject was provided with a brief questionnaire and a booklet of photographs.

Procedure

The questionnaires were distributed to members of the general public randomly chosen from around the South Belfast area. Each subject was given full instructions about what to do and any queries the respondents had were answered. Subjects were initially asked for information on their sex, age and occupation; there then followed a series of questions regarding the purchase of dogs (see results section for questions). The final part asked the subjects to respond to particular questions whilst the second part asked subjects to choose between pairs of photographs of dogs which differed in one aspect only. To ensure that the photographs did differ on the aspect under consideration by the experimenters, pairs were initially chosen to be as identical as possible other than in one particular feature, eg colour of dog. Each pair was then shown to 35 people who were asked to rate the single major difference between the two photographs of dogs. Only those pairs of photographs for which 33 people or more agreed with the experimenter on the difference under consideration were used in the study. One pair of almost identical photographs was accompanied by the question 'Photograph A is a picture of a stray and B is an unwanted - which would you prefer?' In order to prevent each dog's appearance from influencing the subjects' choice, for half the subjects A was the stray and B the unwanted and for the other half A was the unwanted and B was the stray - thus counterbalancing any confounding variables. Fifteen pairs of photographs were used in the final study.

Table 3 The number of people (n=89) who indicated each as a possible place from which to purchase a dog (Q1) and the number indicating which was the most (Q2) and least (Q3) preferred place.

Question	USPCA	Pet store	Breeder	Friend	Market	Paper
<i>Q1 Possible places where one could buy a dog</i>	83	80	70	22	9	4
<i>Q2 Most preferred place</i>	28	3	47	8	0	3
<i>Q3 Least preferred place</i>	4	68	4	9	2	2

Table 4 The total number of each breed admitted to and the number and percentage sold from the USPCA during July 1991.

Breed	Total	No & % sold in July 1991	
<i>Labrador</i>	65	32	49%
<i>Terrier</i>	59	15	25%
<i>Collie</i>	50	21	42%
<i>German Shepherd</i>	47	15	33%
<i>Spaniel</i>	22	14	64%
<i>Jack Russell</i>	17	3	18%
<i>Staffordshire</i>	6	2	33%
<i>Pitbull</i>	4	0	-
<i>Rottweiler</i>	3	1	33%

Table 5 The total number of dogs of each colour admitted to and the number and percentage sold from the USPCA during July 1991.

Colour	Total	No & % sold in July 1991	
<i>Black</i>	144	55	38%
<i>Black/White</i>	62	32	52%
<i>Black/Tan</i>	48	12	25%
<i>Gold</i>	14	5	36%
<i>Yellow</i>	5	2	40%

Of the 100 questionnaires distributed 89 were fully completed and form the basis of the analysis reported below.

The USPCA records for the month of July 1991 were examined and for the 273 dogs sheltered in that month, the number of each type of dog (stray/unwanted), gender, breed, and colour that were sold was noted.

Results

Q.1 List as many places as possible from where one could purchase a dog?

As shown in Table 3 the USPCA was the place cited most often from which to purchase a dog, closely followed by a pet store, with a breeder in third place.

Q.2 Name the most preferred place from which to buy a dog.

The most popular response (see Table 3) was a private breeder, the USPCA was the second most popular place to purchase a dog from.

Q.3 Name the least preferred place from which to purchase a dog.

The pet store was by far the least preferred place from which to purchase a dog (see Table 3). Very few respondents regarded the USPCA as the least preferred place from which to purchase a dog.

Q.4 Which of the following characteristics is most important when purchasing a dog?

There was no doubt that temperament was clearly valued most highly (76%). Factors of size (11%), sex (7%), appearance (4%) and age (2%) in comparison were of little import to most respondents. This was borne out by analyzing the number of each breed of dogs sold from the USPCA in July 1991 (see Table 4). A Chi-squared analysis revealed that breed did not influence which dogs were purchased ($X^2 = 48.06$, $df=8$, $p<0.001$). Breeds with a reputedly good temperament; labradors, collies and spaniels were popular purchases. In contrast, examination of the colour of dogs sold during July 1991 (see Table 5) reveals no significant influence of colour on the dogs purchased ($X^2 = 9.74$, $df=8$, $p>0.3$).

Q.5 Would you prefer a stray (a dog found roaming the streets) or an unwanted (a dog handed into the shelter by an owner) dog?

A significantly greater number of subjects ($p<0.0001$, binomial test) preferred an unwanted dog (85%) rather than a stray dog (15%). This reported preference of individuals for unwanted dogs is reflected in the sale of dogs from the USPCA. In July 1991, 273 dogs were admitted to the shelter (178 strays, 95 unwanteds), significantly ($p<0.01$) more unwanted dogs, 55 (58%) than stray dogs 45 (25%) were sold.

Q.6 *Would you prefer a male or female dog?*

A male dog was preferred by 41 per cent of respondents whilst 59 per cent preferred a female dog. This slight, but non-significant preference for females is also reflected in the dogs purchased during July 1991, where again there was a slight but non-significant preference for female dogs. Of the 273 dogs admitted to the shelter 154 were male and 119 female. Of these 51 (33%) of the male dogs and 49 (41%) of the female dogs were sold. The second part of this experiment asked subjects that, if they had to purchase a dog to give their preference between pairs of photos of dogs matched in all but one aspect. The results of this study and the characteristics examined are given in Table 6.

Table 6 The percentage of people preferring each photograph of a pair for each characteristic under consideration and the number of pairs of photographs used in brackets. The significance of the difference in choice was assessed by a binomial test (P)

Characteristic compared in photograph pair	% preferring each characteristic		Difference in choice (P)
<i>Long vs short hair (1)</i>	63	37	0.012
<i>Blonde vs black dog (2)</i>	65	35	0.004
<i>Old vs young dog (2)</i>	57	43	0.19
<i>Big vs small dog (2)</i>	52.5	47.5	0.69
<i>Dog at front vs back of cage (2)</i>	72.5	27.5	>0.0001
<i>Dog barking vs not barking (2)</i>	27.5	72.5	>0.0001
<i>Dog in clean vs dirty (faeces present) cage (1)</i>	68	32	>0.0001
<i>Dog with kong ball present vs absent (2)</i>	95	5	>0.0001
<i>Dog labelled as stray vs unwanted (1)</i>	18	82	>0.0001

Discussion

The responses to the questionnaire indicate that the USPCA is well recognized as a place from which to purchase a dog, although not the most popular but second to a private breeder. Lack of knowledge regarding the existence of the USPCA thus does not explain why so few people prefer to buy a dog from the shelter, some other explanation must be found; perhaps an ignorance of what the USPCA is really like, or perhaps a preference for a pedigree dog. This should not be a major cause of concern however as only five per cent of the subjects indicated that the USPCA was the place from where they would

least prefer to buy a dog. Interestingly the majority stated that they would least prefer to purchase a dog from a pet store.

There were certain characteristics of a dog that influenced a potential buyer. It was fairly clear that the majority of subjects when asked preferred an unwanted to a stray dog, and indeed this corresponded well with the numbers of stray and unwanted dogs sold from the USPCA in July 1991. One explanation for this preference may be the better physical condition of unwanted dogs compared to their stray counterparts. However the responses from the photographs, where appearance was counterbalanced, still indicated a much stronger preference for the unwanted dog over the stray dog. Thus it would seem that appearance is not the factor which influences subjects to prefer unwanted dogs over strays. The reason for this preference is unknown, but it is a very real factor which influences whether dogs will be purchased or not.

With regard to other characteristics of dogs, temperament was clearly the most important factor, physical characteristics, colour, age, size, hair length and gender were secondary to this. Subjects clearly preferred the dog at the front of the cage and not barking. This latter result supports the fact that temperament was the most important factor in choosing a dog. This strong preference for dogs of good temperament may reflect the media attention at the time of the study, to dog attacks, and the increased pressure for dogs with bad 'temperament' to be muzzled or put down. Subjects also preferred dogs who came to the front of the cage rather than those who remained at the back. From a welfare point of view, this had important implications, as it may mean that those dogs who remain at the back of the cage could be overlooked for potential purchase. It would thus appear from these results that physical characteristics are much less important than the dog's behaviour in influencing choice.

Aspects of the dog's environment exerted perhaps the greatest influence on subject's choice. Dogs in a clean cage were preferred over those in a fouled cage. The largest preference however was found for dogs pictured with a toy in their cage, rather than the same dog without a toy in its cage.

In summary, it appears that certain factors relating to both the dog's environment and behaviour are crucial to the perception of its desirability, and thus possible purchase, more so than perhaps the physical characteristics of the dog. Whilst the physical characteristics of the dog cannot be altered, aspects of its environment, eg cage cleanliness and the provision of toys, can be influenced and attention to these details may increase the dog's chances of being purchased.

Conclusions

There was little to suggest that 6 days of captivity adversely affected the dogs' behaviour. They showed more interest in their food as they became accustomed to their surroundings. Dogs become less agitated in the presence of unfamiliar people during captivity which may be beneficial for their prospects of being bought from the USPCA. There was no effect of the toy on the behaviour of the dogs, but see later. Over the 6

hour observation period the dogs, for the majority of the time, were resting at the back of the cage; this remained the same over the period of the study. However when subjects were asked to make a choice between photos of dogs at the front and rear of the cage there was a clear preference for dogs at the front. One area which may be addressed therefore is how to get the dogs to come to the front of the cage more during the day, as this may increase their chances of being sold. Overall the time spent in captivity had no adverse consequences on the behaviour of dogs as determined by the measures assessed here. Problems could arise if the dogs were held in such an environment for a longer period of time, but given the ever increasing demands made on the USPCA for space and resources this may prove impossible, however desirable. Should longer periods of captivity become the norm, further study should be performed to assess its effects.

One area of concern is the apparent preference for an unwanted over a stray dog. Even being given the label of stray, as demonstrated by the photograph study, greatly reduces the desirability of that dog. This is disturbing given that far more stray dogs are admitted to the shelter than unwanted dogs and that observation of the behaviour of the two types of dogs, strays and unwanted, indicate there were no differences between them. Obviously the label stray has certain connotations which have negative implications. This is an area which needs to be addressed, overcoming the resistance to, and undesirability of stray dogs, may increase the numbers of dogs sold and thus reduce the numbers destroyed. The lack of behavioural differences between stray and unwanted dogs could be stressed to promote stray dogs.

Although there are obviously inherent characteristics of the dogs, eg breed, gender, size, etc which influence possible purchase, these appeared secondary to aspects of their environment which greatly influenced the desirability of dogs. One of these was the presence of a toy in the cage. Although the behavioural data indicated this was ignored by the majority of dogs it did appear to influence the people's choice of dogs from photographs; dogs with a toy were chosen much more often than dogs with no toy in their cage. Thus the addition of a toy, or some other feature to the barren cage may increase the chances of that dog being bought.

The results from this study indicate that the time spent in the USPCA shelter had no adverse effects on the behaviour of the dogs. However the only true way to ensure the dogs' well-being is to prevent them from becoming sheltered dogs in the first place by promoting responsible ownership.

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