Aggressive behaviour in English cocker spaniels and the personality of their owners

A. L. Podberscek, J. A. Serpell

Veterinary Record (1997) **141**, 73-76

The aim of the study was to determine whether there is an association between the personality of the owners of English cocker spaniels and the expression of aggressive behaviour by their dogs. Two-hundred-and-eighty-five owners of purebred English cocker spaniels completed the Catell 16 Personality Questionnaire. One-hundred-and-twenty-eight of them owned 153 dogs previously classified as being 'low' in terms of aggressiveness and 157 owned 172 dogs classified as being 'high' in terms of aggressiveness. Both groups of owners were similar in terms of a variety of demographic variables, including the number of adults and children in the household, the type of house and the sex of the owner. The dogs in both groups were similar in age, age when acquired and sex ratio. Analyses of the data using unpaired t-tests revealed that the owners of high aggression dogs were significantly more likely to be tense ($P<0.001$), emotionally less stable ($P<0.01$), shy ($P<0.01$) and undisciplined ($P<0.05$) than owners of low aggression dogs.

BEFORE the late 1970s it was widely assumed in dog-training circles that most canine behavioural problems were the result of owners failing to exercise sufficient authority, discipline or control over their pets (Woodhouse 1978). This assumption also gave rise to the view that owners of problem dogs were more likely, on average, to be shy, anxious, neurotic and/or submissive (O'Farrell 1995). In contrast, recent opinion among some clinical animal behaviour consultants has swung increasingly towards genetic determinism, and the idea that some dogs are born with a predisposition to develop behavioural problems regardless of to whom they belong. According to this view, 'blaming' owners for their pets' behavioural problems is both misleading and counterproductive to successful treatment (Mugford 1995).

As in the field of human developmental psychology, where the sterile 'nature versus nurture' debate eventually resulted in a sensible compromise position, it is probable that these opposing views of the causes of canine behavioural problems will eventually converge on the middle ground; that is, dog behaviour is the outcome of a continuous interaction between the animal's genetic inheritance and the physical and social environment in which it develops (Bateson 1981, Serpell 1987). Since owners are significant figures in the social environment of most pet dogs, it is plausible to suggest that certain of their characteristics, such as personality or temperament, may exert an influence on the development of a dog's behaviour. The extent of this influence, however, has been the subject of surprisingly little empirical research.

The authors are aware of only one previous investigation of the relationship between the personality of owners and canine behavioural problems. In a study of 50 dog owners attending a small animal clinic for various veterinary treatments, O'Farrell (1987, 1995) found a greater prevalence of certain behavioural problems among dogs belonging to owners who had high scores on the Neuroticism Scale of the Eysenck Personality Inventory (Eysenck and Eysenck 1964). Three of these problems – sexual mounting of people or inanimate objects, destructive when left alone and pestering for attention – would appear to suggest over-intense bonds with the owner, but the fourth, biting people, is ambiguous since the author did not indicate who was bitten or under what circumstances. Despite this ambiguity, O'Farrell (1995) labels these problems 'displacement activities' and attributes their prevalence to high arousal and conflict states induced by over-anxious and neurotic owners.

This paper describes a specific study of the relationship between the personality traits of owners and the prevalence of aggressive behaviour in the English cocker spaniel. Although it is restricted to a single breed and one class of problem, the results are likely to be relevant to an understanding of the development of aggressive behaviour problems in all breeds of domestic dog.

Materials and methods

Dogs

Two sub-samples were selected from 1109 English cocker spaniels which had been used for a previous study (Podberscek and Serpell 1996). In the earlier study, 2000 questionnaires had been randomly distributed to the owners of purebred English cocker spaniels in the United Kingdom. They were asked to rate the frequency with which their dog(s) displayed aggression (on a scale of 1 to 5) in each of 13 different situations; these situations and the type of aggression they represent are shown in Table 1. From these data, aggregate scores were calculated from the 13 possible rating scores for each dog. On the basis of the frequency distribution of these aggregate scores, the lower and upper 25th percentiles were calculated and used as cut-off points for the two sub-samples of dogs used in the present study. Those in the lower 25th percentile were classified as low aggression dogs while those in the upper 25th percentile were classified as high aggression dogs. From this procedure, 596 dogs owned by 521 people were selected for the study; 241 owned 290 low aggression dogs and 280 owned 306 high aggression dogs.

Questionnaire

The owners were sent a letter explaining the project, together with a questionnaire and letter of endorsement from the Cocker Spaniel Council of the UK. They were asked to provide background and husbandry information as well as details of the dog's medical history and behaviour (Podberscek and Serpell 1997). Finally, the owners were asked whether they would be prepared to fill in a personality questionnaire. Those replying in the affirmative were sent a Catell 16 Personality Factor Questionnaire (Catell and others 1970) and answer form. This questionnaire measures 16 primary personality traits (Table 2) and in this study the short version was used (Form D). The questionnaire was originally developed using factor analysis as a means of describing personality in terms of 16 separate and independent traits or factors, each expressing some pattern and regularity to a person's behaviour over time and across situations (Pervin 1970). Although Catell's approach to the assessment of personality has been criticised in the psychological literature for its complexity, its multi-factorial structure rendered it appropriate for the type of exploratory analysis applied in this study. For the purposes of the present discussion, personality traits can be defined as 'broad, enduring, relatively stable characteristics used to assess and explain behaviour' (Hirschberg 1978).

From the initial posting to the 521 dog owners, 382 replied and 341 (89·3 per cent) of these requested a personality questionnaire.

A. L. Podberscek, BVSc, PhD, Animal Welfare and Human-Animal Interactions Group, Department of Clinical Veterinary Medicine, University of Cambridge, Madingley Road, Cambridge CB3 0ES

J. A. Serpell, BSc, PhD, Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, 3900 Delancey Street, Philadelphia PA19104, USA

TABLE 1: Types of aggression shown by English cocker spaniels in the study and the 13 types of behaviour which were indicative of them

Type of aggression		Type of aggressive behaviour *
Protective (of itself and owner)		Aggression towards:
	1	strangers approaching the dog
	2	persons approaching owner away from home
Protective (of territory)	3	Aggression towards persons approaching/ visiting the home
Intraspecific (unfamiliar dogs)	4	Aggression towards strange dogs
Competitive		Aggression:
	5	towards other dogs in the household
	6	when owner gives attention to other person or animal
Possessive	7	Aggression at meal times/defending food
Dominance-type		Aggression:
	8	towards children in the household
	9	towards owner or member of owner's family
	10	when disciplined
	11	when reached for or handled
	12	when in restricted spaces
	13	sudden and without apparent reason

*In the original study (Podberscek and Serpell 1996), owners rated the frequency with which their dogs showed any of these 13 types of aggressive behaviour on a scale of 1 to 5 (1 = never or almost never, 2 = rarely, 3 = occasionally, 4 = usually, 5 = always or almost always). A cluster analysis provided the six types of aggression listed

TABLE 2: The 16 primary personality traits covered by the Catell 16 Personality Factor Questionnaire

	Low score	High score
A	Cool, reserved, impersonal, detached, formal, aloof	Warm, outgoing, kindly, easygoing, participating, likes people
B	Concrete-thinking, less intelligent	Abstract-thinking, more intelligent, bright
C	Emotionally less stable, affected by feelings, easily annoyed	Emotionally stable, mature, faces reality, calm
E	Submissive, humble, mild, easily led, accommodating	Dominant, assertive, aggressive, stubborn, competitive
F	Sober, restrained, prudent, taciturn, serious	Enthusiastic, spontaneous, heedless, expressive, cheerful
G	Expedient, disregards rules, self-indulgent	Conscientious, conforming, moralistic, staid, rule-bound
H	Shy, threat-sensitive, timid, hesitant, intimidated	Bold, venturesome, uninhibited, can take stress
I	Tough-minded, self-reliant, no-nonsense, rough, realistic	Tender-minded, sensitive, over-protected, intuitive, refined
L	Trusting, accepting conditions, easy to get on with	Suspicious, hard to fool, distrustful, sceptical
M	Practical, concerned with 'down to earth' issues, steady	Imaginative, absent-minded, absorbed in thought, impractical
N	Forthright, unpretentious, open, genuine, artless	Shrewd, polished, socially aware, diplomatic, calculating
O	Self-assured, secure, feels free of guilt, untroubled, self-satisfied	Apprehensive, self-blaming, guilt-prone, insecure, worrying
Q1	Conservative, respecting traditional ideas	Experimenting, liberal, critical, open to change
Q2	Group-oriented, a 'joiner' and sound follower, listens to others	Self-sufficient, resourceful, prefers own decisions
Q3	Undisciplined, self-conflict, lax, careless of social rules	Socially precise, following self-image, compulsive
Q4	Relaxed, tranquil, composed, has low drive, unfrustrated	Tense, frustrated, overwrought, has high drive

Of the questionnaires sent out, 285 (83·6 per cent) were completed and returned. One-hundred-and-twenty-eight came from the owners of 153 dogs from the low aggression group and 157 came from the owners of dogs from the high aggression group. Overall, 55 per cent of the 521 people contacted through the initial posting responded to the personality questionnaire.

Statistical analyses

To compare the demographic data from the two groups – for example, age of owners, coat types of the dogs – Chi-square tests were used (Siegal and Castellan 1988). The raw scores from the personality sheets were converted to 'sten' (standard 10) scores; these are distributed over 10 equal-interval standard score points from 1 to 10. The distribution of these scores approximated to a normal distribution and parametric, unpaired *t* tests (two-tailed) were therefore used for the statistical comparisons between the owners of low and high aggression dogs (Marascuilo and Serlin 1988). Because the method used to select the high aggression group tended to select for dogs with multiple types of aggression, it was not possible to explore the relationship, if any, between the personality of the owners and specific types of aggression.

All data were analysed by using the StatView II statistical package (Abacus Concepts).

Results

Demographic data

The two groups were similar in family makeup (most consisted of two adults and no children) and housing type (Table 3). There were significantly more older (65+ years of age) owners in the low aggression group ($P<0·05$) and this agrees with the findings of a previous study (Podberscek and Serpell 1997). Most of the respondents were females (62 per cent in the low aggression group; 70 per cent in the high aggression group) and most of them owned only one cocker spaniel.

The dogs were not significantly different in age (low group mean 2·8 years, mode 2·5 years; high group mean 2·7 years, mode 2·5 years), age when acquired (low group mean 0·4 years, mode 0·2 years; high group mean 0·3 years, mode 0·2 years) or the number of males and females in each group (Table 4). In line with previous findings, dogs in the low group were more likely to be particolours and those in the high group were more likely to be solid colours ($P<0·001$). In addition, there were significantly more neutered dogs in the high group than the low group ($P<0·01$) (Podberscek and Serpell 1996).

Personality analyses

Four personality traits were significantly different between the two groups of owners. Owners of high aggression dogs were significantly more likely to be tense ($P<0·001$), emotionally less stable ($P<0·01$), shy ($P<0·01$) and undisciplined ($P<0·05$) than the owners of low aggression dogs.

In the light of the previous findings by Podberscek and Serpell (1996) that solid colour English cocker spaniels were more likely to be aggressive than particolours, it was necessary to investigate the possibility that owners with particular personality traits were more likely to choose a dog of a particular coat colour. When the personality trait scores of owners of the solid and particolour dogs were compared in unpaired *t* tests, no significant differences were detected.

Discussion

The similarity of the two groups of respondents and their dogs in terms of demographics was encouraging. Housing type, number of adults, number of children, number of English cocker spaniels owned, the age and sex of the dogs, and their age when they were acquired were therefore not a consideration in the interpretation of the results. Furthermore, the fact that only one breed of dog was

TABLE 3: Demographic data on the respondents to the survey

Variable	Low aggression group (128)	High aggression group (157)
Age (years)*		
16-24	5 (3·9%)	3 (1·9%)
25-34	22 (17·2%)	41 (26·3%)
35-44	29 (22·7%)	48 (30·8%)
45-54	44 (34·4%)	37 (23·7%)
55-64	16 (12·5%)	22 (14·1%)
65+	12 (9·4%)	5 (3·2%)
Housing type†		
Flat	1 (0·8%)	3 (1·9%)
Terrace	17 (13·4%)	32 (20·4%)
Semi-detached	41 (32·3%)	54 (34·4%)
Detached	57 (44·9%)	61 (38·9%)
Other	11 (8·7%)	7 (4·5%)
Number of adults in household		
Mean	2·3	2·3
Median	2	2
Mode	2	2
Number of children in household		
Mean	0·5	0·6
Median	0	0
Mode	0	0
Number of English cocker spaniels in household		
Mean	1·4	1·2
Median	1	1
Mode	1	1

* Total in high group 156 – one owner failed to answer this question
† Total in low group 127 – one owner failed to answer this question

TABLE 4: Demographic data on the English cocker spaniels in the study

Variable	Low aggression group (153)	High aggression group (172)
Age (years)		
Mean	2·8	2·7
Median	2·5	2·5
Mode	2·5	2·5
Gender		
Male	72 (47·1%)	91 (52·9%)
Female	81 (52·9%)	81 (47·1%)
Neutered?		
Yes	36 (23·5%)	66 (38·4%)
No	117 (76·5%)	106 (61·6%)
Age acquired (years)		
Mean	0·4	0·3
Median	0·2	0·2
Mode	0·2	0·2
Coat type		
Solid	41 (26·8%)	101 (58·7%)
Particolour	112 (73·2%)	71 (41·3%)

involved overcomes the potentially confounding effects of breed differences.

There are at least three distinct explanations for the observed associations between the personality traits of the owners and the prevalence of aggression in their dogs. First, and as with previous studies that have relied on subjective assessments of animal behaviour, it is possible that the associations were due more to the owners' perceptions of their pets than to real differences in the animals' behaviour (Stevenson-Hinde and others 1980, Feaver and others 1986, Jagoe and Serpell 1996). Owners with high scores on the tense and emotionally less stable personality factors may, for example, be more sensitive to expressions of aggressive behaviour by their pet and may therefore tend to give their dogs higher than average scores on the aggression scales. By asking for the frequencies of particular behaviours in specific contexts rather than more general qualitative evaluations, the questionnaire was designed to reduce this kind of subjective bias as far as possible. However, in the absence of independent behavioural observations and/or tests of dogs belonging to owners of different personality types, it is impossible to exclude this interpretation of the data entirely.

Secondly, it could be argued that the differences in the personality traits of the owners were an effect of their dog's aggression rather than a cause. In other words, the owners of aggressive English cocker spaniels may tend to become more tense and less emotionally stable through their interactions with their pet. However, this suggestion is implausible because all the respondents were adults, and most were over 34 years of age. Although individual behaviours may change with time, it is generally considered that adult personality traits are relatively stable over time (Pervin 1970, Ross 1987, Hampson 1988). In addition, pet ownership is very common in Britain with almost 50 per cent of households owning one or more domestic pets (Pet Food Manufacturers' Association 1996). Research has shown that the percentage of adults who have had pets during their lifetime is between 78 per cent and 86 per cent (Friedmann and others 1984, St Yves and others 1990) and that pet owners tend to keep owning the species with which they grew up (Kidd and Kidd 1980, Serpell 1981). It is therefore very likely that the respondents in this study were experienced dog, if not cocker spaniel, owners. The acquisition of a puppy that subsequently became aggressive would therefore have been unlikely to have had a significant negative impact on its owner's personality, although to rule this possibility out would require personality testing of owners before and after either the acquisition or disposal of an aggressive dog.

The third, and possibly most plausible explanation for the observed associations is the traditional dog trainer view that anxious, tense and neurotic owners sometimes cause their pets to become more aggressive or badly behaved (Woodhouse 1978). However, even if this interpretation is correct, the mechanism of cause and effect is far from clear. O'Farrell (1987, 1995) concluded that the behavioural problems (including biting people) of dogs belonging to neurotic owners were the product of owner-induced conflict states and over-arousal. The present data, however, are more consistent with the idea that these dogs respond to their owners' anxiety, neuroses and/or shyness by becoming more aggressively assertive in a wide range of circumstances. It will require further research to determine whether this apparent effect of the owner's personality was the result of the particular ways in which these owners interacted with their pets or due to some other factor. For example, it is conceivable that anxious, neurotic owners are more protective of their pets, and may therefore fail to socialise them adequately during the early months of life.

It is often suggested that it is inappropriate and unhelpful to blame owners for their pet's problematical behaviour (Mugford 1995, O'Farrell 1995). Nevertheless, if one accepts that prevention is better than cure, then any factor that increases the likelihood of a dog developing problems should be a source of concern. The results of the present study provide tentative evidence of a causal relationship between certain aspects of an owner's personality and the expression of aggressive behaviour by English cocker spaniels. Although further work is needed to elucidate the true nature of this relationship (and to exclude alternative interpretations), the authors consider that these findings not only have potentially important implications for the prevention of behavioural problems in dogs, but also add a further dimension to our understanding of the environmental factors which influence the development of canine temperament and behaviour.

Acknowledgements. – The authors thank the Royal Society for the Prevention of Cruelty to Animals, and the Cocker Spaniel Council and its contributing clubs for supporting this and the continuing work. Thanks are also due to Elizabeth Paul for useful discussions and comments on previous versions of this paper.

References

BATESON, P. P. G. (1981) Animal Behaviour 3: Genes, Development and Learning. Eds T. R. Halliday, P. J. B. Slater. Oxford, Blackwell. p 52

CATELL, R. B., EBER, H. W. & TATSUOKA, M. M. (1970) Handbook for the Sixteen Personality Factor Questionnaire (16PF). Champaign, Illinois, Institute for Personality and Ability Testing

EYSENCK, H. J. & EYSENCK, S. B. J. (1964) Manual of the Eysenck Personality Inventory. London, University of London Press

FEAVER, J. A., MENDL, M. & BATESON, P. (1986) *Animal Behaviour* **34**, 1016

FRIEDMANN, E., KATCHER, A., EATON, M. & BERGER, B. (1984) The Pet Connection. Eds R. K. Anderson, B. L. Hart, L. A. Hart. Minneapolis, University of Minnesota Press. p 300

HAMPSON, S. E. (1988) The Construction of Personality: An Introduction. 2nd ed. London, Routledge

HIRSCHBERG, N. (1978) Personality: A New Look at Metatheories. Ed H. London. New York., Macmillan. p 45

JAGOE, A. & SERPELL, J. (1996) *Applied Animal Behaviour Science* **47**, 31

KIDD, A. H. & KIDD, R. M. (1980) *Psychological Reports* **46**, 939

MARASCUILO, L. A. & SERLIN, R. C. (1988) Statistical Methods for the Social and Behavioral Sciences. New York, W. H. Freeman and Company

MUGFORD, R. A. (1995) The Domestic Dog: Its Evolution, Behaviour and Interactions with People. Ed J. A. Serpell. Cambridge, Cambridge University Press. p 139

O'FARRELL, V. (1987) *Journal of Small Animal Practice* **28**, 1037

O'FARRELL, V. (1995) The Domestic Dog: Its Evolution, Behaviour and Interactions with People. Ed J. A. Serpell. Cambridge, Cambridge University Press. p 153

PERVIN, L. A. (1970) Personality: Theory, Assessment and Research. New York, John Wiley & Sons

PET FOOD MANUFACTURERS' ASSOCIATION (1996) PFMA Profile 1996. London, The Pet Food Manufacturers' Association

PODBERSCEK, A. L. & SERPELL, J. A. (1996) *Applied Animal Behaviour Science* **47**, 75

PODBERSCEK, A. L. & SERPELL, J. A. (1997) *Applied Animal Behaviour Science* **52**, 215

ROSS, A. O. (1987) Personality: The Scientific Study of Complex Human Behavior. New York, CBS College Publishing

SERPELL, J. A. (1981) *Psychological Reports* **49**, 651

SERPELL, J. A. (1987) *Journal of Small Animal Practice* **28**, 949

SIEGAL, S. & CASTELLAN, N. J. (1988) Nonparametric Statistics for the Behavioral Sciences. 2nd ed. London, McGraw-Hill Book Company

STEVENSON-HINDE, J., STILLWELL-BARNES, R. & ZUNZ, M. (1980) *Primates* **21**, 66

ST YVES, A., FREESTON, M. H., JACQUES, C. & ROBITAILLE, C. (1990) *Psychological Reports* **67**, 1067

WOODHOUSE, B. (1978) No Bad Dogs. Aylesbury, Bucks, Hazell, Watson & Viney