A Procedure For Assessing Human-Companion Animal Compatibility

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Interpretations of behaviour problems in animals can be aided by setting them in the context of the human-companion animal relationship. Research in this area has tended to focus on only a few aspects of this relationship, notably pet attachment(e.g.Holcomb, Williams & Richards,1985; Melson,1988; Stallones, Johnson, Garrity & Marx, 1990). This paper examines another aspect: the compatibility of the human-companion animal relationship. Compatibility is viewed as the fit between the animal and the owner on physical ,behavioural and psychological dimensions, as perceived by the owner. The physical and behavioural requirements of individual owners and the various pet species, and breeds within species, are relatively easily identified. The more elusive component is the psychological aspect. Exploring this issue led to the belief it is the psychological component that is critical to overall compatibility and its consequences and consequently to the need for some psychological assessment device.

This paper describes the development and evaluation of a questionnaire procedure for assessing compatibility, the Animal-Human Compatibility Scale (AHCS). Two sections are were designed, one to assess the owners perception of their pet's compatibility with themselves, another to assess their own compatibility with their pets. The items in these two sections formed two subscales designated Pet Compatibility and Owner Compatibility respectively. The starting point for the AHCS was an article written by Serpell(1983), who interviewed 25 dog owners in an effort to " explore every possible aspect of each owner's relationship with his or her pet"(p.58). This resulted in a list of 22 canine attributes which were important to most of the owners. He then designed a questionnaire in which each attribute was represented on a rating scale with the opposite poles of each attribute at either end. For example, the item concerning playfulness was presented with 'never or rarely plays' and 'very playful, always enjoys games' as the respective anchor points of the item(Serpell, 1983,p.63). For the present study, these 22 attributes were discussed with several pet owners, including owners of cats, and two veterinarians in order to identify missing attributes which might be salient. One of Serpell's original items was dropped, and several of the attributes were separated into two or more questions as they appeared to be measuring different aspects of behaviour within the same item. The final version of the pet compatibility subscale consists of 26 items involving the owner's ratings of their pets.

The Owner Compatibility subscale was based on the idea that compatibility also encompasses the owner's behaviour towards, and feelings for, the animal. Thus, a further set of items was required to assess the owner's responses to their pets. These items arose from the previously mentioned discussions with pet owners and veterinarians as well as the definition of compatibility used in this study. For example, the item concerning exercise was presented with'I always provide the exercise this pet needs' and 'I never provide the exercise this pet needs' as the anchor points. The final version of the Pet Compatibility subscale consists of 15 items which involve the owner's ratings of themselves as owners.

As in Serpell's study, all items are rated twice, first with respect to the actual pet/owner, and second with respect to the ideal pet/owner. Compatibility is then indexed by

the absolute difference between each pair of ratings. A Pet Compatibility score is formed by averaging the differences across the 26 items in the first part of the questionnaire, and an Owner Compatibility scores by averaging across the 15 items in the second part. These two scores are also averaged to form a total compatibility index. This averaging procedure means that the two subscale and total scale scores all have a possible range between zero and nine. The direction of scoring also means that a higher score indicates a greater degree of *incompatibility*

Evaluation of the AHCS was undertaken with a sample of 176 volunteers recruited by advertisements in newspapers, veterinary clinics, university courses for mature students and by word of mouth. The participants, of whom 68% were female, ranged in age from 21 to 79 years, with a mean age of 42. The only eligibility criterion was that the individual had shared their house with the same companion animal for at least a year. The 176 participants completed a questionnaire which included the AHCS, and measures of pet attachment, social support, physical symptoms and mental health. Respondents completed the questionnaire in their own time and posted it back in a pre-paid envelope.

Item analyses of the final version of the AHCS suggested that the content was generally comprehensible and answerable. Individual item profiles appeared to be coherent, and although respondents completed the questionnaire without guidance from the researcher, almost all of them responded to almost all of the items. An item reliability analysis was undertaken to assess the items clustered appropriately within each subscale. Cronbach's item reliability coefficients were 0.84 for the Pet Compatibility and 0.87 for the Owner Compatibility subscales respectively, indicating a respectable level of internal consistency. Scores on the two parts were correlated, $r=0.49, p<0.001$ suggesting that they were indexing different but related aspects of compatibility.

Turning to the distribution of scale scores, although the possible range of incompatibility scores was from 0 to 9, the actual ranges were from 0 to 3.81 on the Pet Compatibility subscale and from 0 to 5.47 on the Owner Compatibility subscale. Bearing in mind that a low score indicates a high compatibility, these ranges suggest that the owners in this study in general see themselves as having compatible relationships with their pets. The mean and standard deviation for the compatibility score were 1.23 and 0.79 respectively. On the subscales the mean and standard deviation were 1.45 and 0.84 for the Pet Compatibility and 0.91 and 0.92 for the Owner Compatibility. Although a relatively small mean difference, this suggests that participants rated themselves as owners to be more compatible with their pets than they rated their pets to be compatible with them. When cat and dog owners were examined separately, on the pet subscale, the 57 cats were found to be significantly less compatible with their owners than the 84 dogs, ($t(139)=-3.74, p<0.001$). Means for these two groups were 1.75 and 1.24 respectively. On the total scale the owner compatibility , however, no significant species differences were evident.

If the AHCS is a valid measure of compatibility, it should be related in predictable ways to measures of other theoretically relevant concepts. It was predicted that owners with more compatible relationships would be more likely to experience greater attachment to their pets. This prediction was borne out by a correlation of $r=0.44, p<0.001$ between total and compatibility score (reversed) and self-rating on the Pet Attachment Survey (Holcomb, Williams & Richards, 1985). Arguing from the demonstrated link between poor social support and ill health (Cohen and Hoberman, 1983) it was further predicted that owners with pet compatibility problems would be more likely to report symptoms of ill health. A correlation of $r=0.21$, $p<0.05$, between total compatibility score (reversed) and score on the mental health inventory, (Veit and Ware, 1983) suggested that this was the case for mental health problems. However, no significant correlation was found between AHCS scores and

physical symptoms reported on the PILL (Pennebaker, 1982). More detailed analyses of subscales using multiple regression essentially confirmed this pattern. These multivariate analyses also revealed that the link between compatibility and mental health symptoms remained even when the effect of general social support(measured by the Interpersonal Support Evaluation List; Cohen, Mermelstein, Kamarck & Hoberman, 1985) was statistically controlled. Thus, on balance, the analyses of the relationships between AHCS scores and those on measures attachment and health support the validity of the measure.

Improving the measure

Despite the psychometric adequacy of the compatibility measure, this was its first trial and the process highlighted a number of improvements which could be made. The first concerns whether it may be appropriate to develop species-specific versions of the measure. The measure presented here contains 41 items drawn from the initial pool of 48. Of the 7 items dropped because of poor response to rate, 6 were more appropriate for dog than cat owners. It may therefore be helpful to different versions of the measure for cat and dog owners, and perhaps for owners of other species also.

The second is concerns the way in which the items were presented. To discourage any tendency for participants to respond in a set fashion by choosing the same response for each question, the format was reversed for some of the items such as the positive anchor, when there was one, was not always represented by the same number. Although this appeared to work for most participants, some were confused, or did not read each item carefully, and consequently responded to certain items without noticing the change in the anchor points. This meant that while they answered correctly with respect to providing an ideal and an actual rating on each item, the number associated the number associated with each rating was not correct. Thus, the different scores, which were calculated in the present study by taking the absolute difference between the ideal and actual ratings, were the only ones that could be used. In future studies it would be better to rearrange the scales so that the positive anchors are aligned, thus keeping the position of similar responses consistent. Under such conditions a meaningful average ideal score and average actual score, in addition to the difference score, would be produced. It should be noted, however, that because not all items have obvious positive and negative anchors, an absolute difference score nonetheless provides the most appropriate score of compatibility.

Currently, the two subscales of the AHCS distinguish between the pet and owner items. However, as mentioned earlier, the present conceptualisation of compatibility distinguishes three dimensions fir both owner and animal: physical, behavioural and psychological. A further refinement could involve separating the items which represent these dimensions into three separate groups within the pet and owner subscales. A more refined measure could have greater utility for more fine-grained analysis in both research and clinical contexts.

Research applications

A clear priority is to test the AHCS with different and more varied samples of owners, notably owners of different species and owners who present a greater range of compatibility with their pets. Ideally these diverse samples should be assessed at more than one point in time. The relationship between a pet and its owner is obviously not static, but evolves and develops both naturally and as a result of specific experiences. The cross-sectional nature of the present study could not throw light on the developmental processes.

Additionally, the investigation of connections between compatibility and mental and physical health could usefully be extended. For example, with respect to physical health, it would be interesting to examine specific physical illnesses rather than to rely solely on self-

reports of physical symptoms with all their well known biases (Pennebaker, 1982). More generally, it might be enlightening to consider the effects of the pet-owner relationship on the animal's health, and perhaps the implications of this on the owner's health. Again, such studies would be strengthened by a longitudinal design to examine the longer term effects of compatibility.

Clinical applications

While the measure of pet-owner compatibility was designed to assess existing relationships, it could also be developed for use in assisting prospective owners in the selection of compatible pets. There is a growing body of information available about the physical and behavioural characteristics of dogs and cats of specific breeds (Coffey,1982; Hart and Hart, 1984,1985,1988). Some authors have discussed the need for prospective owners to think about the issues involved in animal ownership (Beaver,1976; Dunbar, 1987; Fox,1981). These ideas do not appear to have been formalised into a set of items or a questionnaire that could be given to prospective owners to assist them in identifying the aspects of their respective lifestyles, and expectations of the pet-owner relationship that are important for a good match between pet and owner. The use of a formal compatibility measure could result in fewer unwanted pets or pets with behavioural problems.

For people presenting to veterinary surgeons or animal behaviour specialists with problem animals, a compatibility measure could be used as a screening device to identify the areas in which problems already exist between pet and owner. The way in which owners rate themselves and their pet (actual ratings) in contrast to their expectations of themselves and their pet (ideal ratings), may highlight specific behaviours or feelings which are problematic. An overview of the relationship could provide a starting point for the clinician and owner to discuss and work on problem behaviours.

Looking further ahead, if compatibility ratings are collected from sufficient owners of a variety of breeds of cats and dogs, a database could be established and norms developed. Possibly certain breeds of dog, for example, rarely live up to their owners' expectations on particular criteria. It could be advantageous for future owners to have such 'normative' information generally available.

Conclusion

It is concluded that the AHCS is a promising procedure for assessing human-companion animal compatibility by virtue of its demonstrated usability, reliability and validity in the present study. It also shows potential in an applied setting both as a pet selection instrument and to provide information about possible problem areas in pet and owner interactions.

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