CHAPTER 4

Psychosocial Benefits of Animal Companionship

LYNETTE A. HART

Center for Animals in Society, School of Veterinary Medicine, University of California, Davis, California

I. IMPORTANCE OF PETS IN QUALITY OF LIFE AND FOR SOME VULNERABLE INDIVIDUALS

Companion animals offer one of the most accessible enhancements to a person's quality of life. They are themselves an unconditional support system that can be drawn on at any time of day or night, when family members or friends may be busy with other things or unreachable. Having warm and accepting companionship near at hand provides essential comfort that is available whenever it is especially needed. A source of relaxation and entertainment is always close by. The increased quality of life afforded people by their animals has relatively low cost, in comparison with the efforts involved with human companions. The animal's demands are simple and uncomplicated, and, because the animal does not talk, the conflicts are few as long as the person avoids most behavior problems with the animal through careful selection and management.

Substantial evidence in the research literature on human social support points to the central role of relationships—or the lack of them—as being either stress producing or health promoting. Social networks and support were
clearly associated with mortality risk in a classic study of 9-year mortality data; increased mortality rates were associated with each decrease in social connection (Berkman & Breslow, 1983). Adding supportive groups to assist grieving spouses was found in one study to be effective only with those individuals who had inadequate emotional support, because some had already reestablished sufficient emotionally supportive relationships (Barrett, 1978).

Everyone's life brings with it periods of challenge and heartbreak when reliance on friends and family can make a substantial difference in morale and the ability to regain an optimistic view. Yet, regardless of support from family and friends and, in some instances, social programs, medical care, and public outreach assistance, at times people who are at their greatest vulnerability will be without the social relationships they need for a reasonable quality of life. A few examples in which people may be at particular risk are those persons who are facing hearing, visual, or mobility disabilities, living alone in later years, or experiencing the onset of serious medical problems. Although some of these crises are temporary, their initial impact may be almost paralyzing.

Modern living requires coping with rapid changes and complexity, and often brings social isolation that leaves people without the social or family support they need during unexpected crises. Anyone living alone who is socially isolated and possibly experiencing heightened medical problems may begin to feel profoundly alone and lack the will and the ability to move forward. Geographic mobility commonly forces people to relegate their extended family connections to telephone or e-mail connections, rather than interacting in person. Close companionship may no longer be available on a consistent basis. The high costs of loneliness and a lack of social support to human health are well documented (House et al., 1988). Loneliness and depression have been linked with a wide array of diseases, including cancer and cardiovascular disease (Lynch, 1977), and some leading scientists are even suggesting that depression is a central etiologic factor of these diseases (Chrousos & Gold, 1992).

Most animal-assisted activities (AAAs) and animal-assisted therapy (AAT) are directed at individuals who are institutionalized, rather than to precarious individuals who still live at home, but are in jeopardy nonetheless. For those who are struggling to continue living independently, it is reasonable to believe that companion animals can make a difference and perhaps prolong their period of independent living, lessening or delaying their requirements for institutional living or even in-home nursing care. Such a trial has not been conducted. One community program placed animals with elderly individuals, provided some support for their care, and arranged for a longitudinal assessment (Lago et al., 1989); however, participants, most of whom had been given dogs, were challenged with their own health problems. Animals requiring lower effort than dogs, such as cats, may have been more appropriate companions for
these elderly persons. The effects of cat ownership have not been studied extensively, but one correlational study in Australia found better scores on psychological health among cat owners than nonowners (Straede & Gates, 1993). A study by Karsh and Burket with few participants observed over a 1-year period reported that long-term cat owners were less lonely, anxious, and depressed than nonowners, and owners also reported some improvements in blood pressure (Karsh & Turner, 1988).

Moving into a state of permanent institutional living involves crossing a great divide that sharply curtails the person's quality of life, reduces contact with the world at large, and generally increases the cost of living (e.g., doubling the cost of in-home care by family members). If companion animals can provide psychosocial health benefits, an investment in providing animal companionship for such individuals could make a significant difference in the person's health, perhaps extending by many months or even a few years the period of carrying on a normal lifestyle.

It is generally recognized that companion animals provide a readily available source of warm support that can be compensatory for human companionship. Certainly the enthusiastic love of the two dogs in Fig. 1 appears convincing to the two owners. Also, cat owners rank their cats higher than their husbands in providing affection and unconditional love (Zasloff & Kidd, 1994a). Although

FIGURE 1 Animals can clearly express their love and affection to their human companions. (Photograph by Bonnie Mader.)
animals in positive relationships enhance the quality of life for people in many situations, the beneficial psychosocial effects of companion animals can most easily be seen and measured with individuals who are psychologically vulnerable; the psychosocial effects are not as obvious in more average situations. As people age, their former social networks generally shrink as they leave the workplace, move into smaller homes, lose friends and family members who have moved away or died, or experience chronic health problems. For such individuals, having companion animals living with them offers a source of reliable and accessible companionship. In one study of elderly dog owners, a majority said their dog was their only friend and believed their relationship with their dog was as strong as with humans (Peretti, 1990).

Individuals with severe physical disabilities who use wheelchairs can be motivated by an animal to perform physical tasks for therapy in the care of the dog, while benefiting socially from a service dog. As a working partner, the dog provides assistance with physical tasks. Children with mental or other disabilities can benefit from the extraordinary experience of therapeutic horseback riding, an occasion affording joyous human social support as well as the unique sensation and physical challenge of riding the horse (Hart, 1992). Empirical research has addressed four areas of psychosocial benefits of companion animals; these effects are reviewed in this section.

A. EFFECTS OF COMPANION ANIMALS ON LONELINESS AND DEPRESSION

Universally, people report that what they value most in their relationships with dogs and cats is the companionship they offer. Although perhaps considered commonplace, animal companionship offers a psychosocial benefit that can provide a meaningful and substantial comfort. Loneliness, lack of companionship, depression, and lack of social support are major risk factors that can impede a person's well-being and even increase the likelihood of suicide or other maladaptive behaviors. Individuals who are experiencing periods of adversity or its onset are at a heightened vulnerability, feeling more needy and subject to feelings of loneliness and depression. Companionship with animals in several studies has been associated with people suffering less depression and loneliness. The animals deeply comfort their human companions and apparently serve as a buffer of protection against adversity, a notion suggested by Siegel (1993). The concept of social support creating both main and buffering effects against stress is well known in discussions of human social support (Thoits, 1982); Siegel extended the buffering effects to include the support companion animals provide.
As set forth in a recent review (Garrity & Stallones, 1998), various methods have been used to assess the effects of contact with companion animals on human well-being. Descriptive, correlational, and experimental research designs are used to test the possibility that animals provide social support. The reviewed correlational studies often were hypothesis based, whether cross-sectional or longitudinal. Studies based on a structural approach to social support assessed simply whether or not a pet was present. The more complex buffering perspective evaluated whether an animal was intervening to soften the impact of stressful life events. Psychological, social, behavioral, and physical types of well-being were examined in these reviewed studies. After expressing some cautions, the authors concluded that the benefits from contacts with pets seem consistent with the benefits supported by research in studies of human social support. Although the benefits appeared to occur on psychological, physical, social, and behavioral levels, the benefits were apparent only in certain situations and under certain circumstances. Pet association frequently appeared beneficial both directly and as a buffering factor during stressful life circumstances, but did not occur in all situations or for everyone. A study of elderly women found that the strength of the relationship with their pets was unrelated to levels of depression (Miller & Lago, 1990). Similarly, an initial study of war veterans found pet ownership associated with improved morale and health (Robb, 1983), but, later, no differences were observed in an analysis of the full sample (Robb & Stegman, 1983).

1. Elderly People

In a study of elderly people, among those who were grieving the loss of their spouses within the previous year and who lacked close friends, a high proportion of individuals without pets described themselves as depressed, whereas low levels of depression were reported by those with pets, even though no differences in health status were found between those with and without pets among elderly people in general (Garrity et al., 1989). Similarly, no differences in health status were found among people 21 to 64 years of age with and without pets (Stallones et al., 1990). Having pets thus seemed to be associated with less depression among these deeply bereaved, elderly individuals, but a similar effect was not found for the general population.

It is essential to bring up a caveat, however: People who seek out animal companionship may be more skilled in making choices that maintain their own well-being. The traits of dependability, intellectual involvement, and self-confidence (comprising the skills of planful competence) are strong characteristics that continue throughout life, and individuals who as young people express planful competence seem able to absorb adverse life events in stride and take
effective actions to keep their lives on track (Clausen, 1993). A decision to
live with an animal could be one aspect of taking effective action in one's life.

We do not really know the mechanism of the correlational protective effect
found by Garrity et al. (1989). As already suggested, individuals keeping pets
may also have had different social skills and abilities that were reflected in the
decision to have a pet. Yet, it may be tempting to ascribe the difference found
in this study to the interactions with the pet, reflecting the laughter that a pet
invariably brings, the responsibility to nurture another individual, and the
loving devotion of a pet.

Living alone, though common in the United States, may itself be inherently
stressful for most people. Loneliness occurs often in elderly people and is
associated with various diseases. In another correlational study, elderly women
living alone were found to be in better psychological health if they resided
with an animal. They were less lonely, more optimistic, more interested in
planning for the future, and less agitated than those women who lived without
a pet (Goldmeier, 1986). Living with a companion animal was not associated
with an incremental psychological boost for those women who were living with
other relatives. Somewhat surprisingly, a similar protective effect of companion
animals was found in a study of women graduate students who lived alone:
Those living with a companion animal, or a person, or both, rated themselves
as less lonely than the graduate student women living entirely alone, as shown
in Fig. 2 (Zasloff & Kidd, 1994b).

2. Depressed People

In the classic budgie-begonia study of depressed community-dwelling elderly,
participants were less negative psychologically after prolonged exposure to pet
birds (Mugford & M'Comisky, 1975). A recent study, in which the variables
were better controlled, examined the depression levels of elderly men who
were exposed to an aviary at an adult day health care program (Holcomb et
al., 1997). Men were offered the aviary in a repeated treatment design (ABAB)
of 2 weeks with no treatment, 2 weeks with treatment, and then a repeat. No
difference occurred in depression levels of the men overall with the presence
of the aviary, however, a greater reduction in depression was associated with
greater utilization of the aviary. The men who sought out the aviary also
apparently experienced increased social interaction with family and staff mem-
bers, while the men who ignored the aviary were unaffected by it.

Using animal-assisted therapy as an intervention for depression in college
students has also been used as an experimental approach. The group given
AAT subsequently was found to have lower scores on the Beck Depression
Inventory than the control group (Folse et al., 1994). Surprisingly, the AAT
in conjunction with group psychotherapy was no more effective than the
3. People with a Hearing Disability

Providing an assistance dog to someone with a disability is a major intervention with psychosocial effects. Loss of hearing is an invisible disability that limits communication and predisposes people to feeling isolated and lonely. However, a dog serves as a full-time companion. Although an animal cannot participate in a complex conversational interchange, animals can be conversational partners that respond behaviorally to the statements and moods of their human companions. They also facilitate socializing within the neighborhood, more than is anticipated prior to having a hearing dog (Hart et al., 1996). In Hart et al.'s study of people with impaired hearing, those who had a hearing dog rated themselves as less lonely after receiving their dogs and also were less lonely than those who were slated to receive a hearing dog in the near future.
4. Conclusions

The findings that animals alleviate loneliness for women living alone but not those living with others, and that animals seem to offer some psychological protection to people who are deeply grieving and isolated, are consistent with a view that animals may compensate and provide people with basic, daily, essential psychosocial requirements when they are lacking them. Once the basic requirements are met by family or friends, however, it seems that a ceiling is reached such that significant positive effects are more difficult to detect. Evidence also reveals that people differ in the extent to which they draw on the animal companionship that could offer them some comfort.

B. Socializing Effects of Animals

The previous section emphasized the painfulness of loneliness and depression and reviewed some evidence indicating that animals ameliorate this type of isolation. This section reviews the empirical data that point toward the strong socializing impact of animals. Noteworthy in this regard are two studies of institutional environments. Visits with AAAs improved social interactions among residents and staff in a psychiatric facility for elderly women (Haughie et al., 1992) and in a residential home (Francis et al., 1985). Two other studies showed that visits with animals to nursing homes for patients with Alzheimer's disease improved their social interactions (Kongable et al., 1989; Beyersdorfer & Birkenhauer, 1990).

The absence of a supportive network of social companionship is a primary cause leading to depression, stress, suppression of the immune system, and various disease states (Serpell, 1986/1996). Social companionship buffers and reduces the impacts of such stress and anxiety. Viewed in this context, animal companionship offers an accessible compensatory alternative. Animals are consistently available companions especially appreciated by people who have spent much of their lives living with animals. Although animals do not respond verbally to conversation, they convincingly convey their love and affection to their human companions. They respond to conversation sufficiently enough that people almost inevitably speak to their animals. Dogs are particularly avid companions, staying with a person more than cats, and provoking social interactions (Miller & Lago, 1990). They are more interactive when living with a solitary person than with a family, essentially providing compensatory social contact for those who live alone (Smith, 1983).

Animals stimulate people to socialize with other people, often with the animal as a topic of conversation. Even a rabbit or a turtle arouses interest and friendly conversations about the animal from strangers (Hunt et al., 1992).
People may be stimulated to start conversations and to laugh and exchange stories more when a dog is present than when the person is alone (Messent, 1984). This pronounced effect of animals is evident to anyone who takes a friendly animal walking in a neighborhood. The powerful socializing effect is a primary benefit for people using wheelchairs who have a service dog (Eddy et al., 1988; Mader et al., 1989). The dog serves to normalize the social environment for the person with a disability who might otherwise be ignored or treated awkwardly. Figure 3 is a typical example of the interested responses of people to someone with an assistance dog. Similarly, for those with a hearing loss, a hearing dog provides unexpected social benefits, increasing social interactions for the person within the neighborhood and community as shown in Fig. 4 (Hart et al., 1996).

As full-time companions, dogs and cats themselves are conversational partners, even though they do not respond with verbal conversation. Almost everyone talks to their own dog or cat, and virtually all people walking their dogs speak to them (Rogers et al., 1993). People even speak to their birds on a regular basis (Beck & Katcher, 1989). In addition, the animals provoke people to speak to others. Animals of almost any species stimulate conversations, causing people to speak with strangers in a friendly way. A soft furry

FIGURE 3 Neighbors and people in the community approach in a friendly way to meet someone in a wheelchair who has a service dog.
Socializing Effects of Hearing Dogs: Actual and Prospective Recipients

![Bar chart showing increased socializing as estimated by actual and prospective owners of hearing dogs.](image)

*χ²: p < 0.01

FIGURE 4 Increased socializing as estimated by actual and prospective owners of hearing dogs. (Modified from Hart et al., 1996.)

Rabbit appears to be a stronger stimulus for evoking conversations than a turtle (Hunt et al., 1992). In such cases, the animals are a convenient and comfortable topic of conversation. People who regularly walk their dogs talk with acquaintances about their dogs whether or not the dogs are present at the time (Rogers et al., 1993).

Evidence that the social support of a dog enhances health was reported in a recent study of people using assistance dogs, reporting that social facilitation, social support, and an affectionate relationship were all correlated with the person's self-perceived health (Lane et al., 1998). Participants described how the dog created social opportunities with people while also serving as an essential family member and friend, as shown in Fig. 5.
C. MOTIVATING EFFECTS OF ANIMALS

Animals also have the ability to inspire and motivate people to engage in constructive activities that they would not have otherwise. People may spontaneously decide to arrange to bring an animal into a nursing home, school, or hospital on a regular basis. Often this is done by an individual or a small local group that self-organized for this purpose. As this practice became widespread, it came to be known as offering AAAs, or, if integrated into an overall treatment plan for the patient, AAT. Such volunteers find it rewarding to share their animals with others who enjoy them, to the point that many make commitments to visit facilities on a routine weekly basis. It is important to note that such remarkable motivation probably would not occur if the person were visiting
the nursing home alone. The animal partner is the essential participant that makes the effort of the volunteer worthwhile. The main contribution of the animal to AAA may be in inspiring the volunteer, because human visitors alone were found in one study to be as effective as pets alone or human visitors with pets in eliciting smiling and alertness from patients (Hendy, 1987).

As anyone with an active dog knows, dogs can motivate people to take walks. This effect was documented in a study of people before and after adopting a dog (Serpell, 1991). After people adopted a dog, they sharply increased their daily walking for the 10 months of the study. Similarly, elderly people in Southern California who kept dogs reported spending 1.4 hours per day outdoors with the animal (Siegel, 1990, 1993), a much more consistent activity than would be likely even in an organized exercise class.

D. EFFECTS OF ANIMALS IN MOBILIZING ATTENTION AND CALMING

Even sitting looking at fish in an aquarium relaxes and relieves anxiety for patients in a dental waiting room (Katcher et al., 1984). This calming and comforting effect from animals even applies to individuals with Alzheimer's disease (Fritz et al., 1995). As shown in Fig. 6, Alzheimer's patients still living at home had fewer aggressive and anxious outbursts if they had regular exposure to a companion animal, as compared with patients lacking an animal. The calmer behavior is undoubtedly less distressing and exhausting to the caregiver, who invariably is at risk for burnout in this challenging situation.

Similar calming effects have been reported in therapeutic settings. During group therapy with dissociative patients, a therapy dog was found to offer a calming influence and also alerted the therapist to distressed patients (Arnold, 1995). In another study, a therapy dog's visits to a psychiatric ward were associated with a substantial reduction in noise levels (Walsh et al., 1995).

The calming effects of animals are especially valuable with children exhibiting attention deficit/hyperactive disorder and conduct disorders and have been the basis for therapeutic interventions. An extended series of studies in a learning setting have shown that animals capture and hold children's attention and direct their attention outward (Katcher & Wilkins, 1997). Calming the children was a first essential step. With their attention mobilized and directed outward, agitation and aggression diminish, creating a better teaching environment. The improvements in behavior generalized across to some other teaching situations but did not become universal to all contexts. Another study in a classroom setting involved children with Down's syndrome; a real dog provided a more sustained focus than an imitation dog for positive and cooperative interactions with the dog and the adult (Limond et al., 1997).
II. NORMALIZING EFFECTS OF ANIMALS

Most AAT has been directed toward the most vulnerable populations of people, many of whom have little prospect of a full recovery of function and health. What is often not considered is that all people are likely to experience periods in their lives of heightened vulnerability, some temporary and others prolonged. For example, everyone at some time experiences severe illness or disability, suffers through the illness or death of family members, and if they live long enough, sustains the adverse consequences of aging. For anyone, these experiences can create a precarious vulnerable state, particularly if the person lacks a strong network of social support. Whether this precipitating problem represents a new entrenched or a temporary vulnerability, companion animals can normalize a stressful circumstance. They offer engaging and accepting interactions without reflecting back the discomfort, concern, and agitation of the difficult situation. An animal can communicate a message such as “It’s not as bad as it seems; everything is fine,” and thus help put people more at ease.
A. FACILITATING NORMAL DEVELOPMENT

The effects of dogs in normalizing the social environment were illustrated in a study of schoolchildren who used wheelchairs in classes comprised primarily of able-bodied children. The children using wheelchairs who had service dogs consistently were approached more often on the playground than those without service dogs (Mader et al., 1989). The dogs were able to successfully override the able-bodied children's discomfort with a child's disability and thus promote a more normal psychosocial environment for the developing child. Because the presence of the dog ensured a more welcoming and warm reception, the child with the disability who has a dog was treated more as an able-bodied child. A variant of this effect relates to the fact that older children of siblings nurture and care for younger siblings. However, the youngest siblings or only children give heightened attention to their animals, thus providing themselves with nurturing opportunities they otherwise would miss (Melson, 1988).

B. AMELIORATING EMOTIONAL CRISSES AND EXTENUATING CIRCUMSTANCES

Another example of normalizing a social environment comes from a study of patients with Alzheimer's disease who were still living at home with family caregivers. Aggressive outbursts and episodes of anxiety were less common among the patients who had regular contact with companion animals (Fritz et al., 1995). For the caregiver, this calming influence of the animal on the patient would reduce the stress of coping with this difficult disease in a family member and perhaps delay the time when the patient had to be placed in an institutional facility.

Siegel (1993) has proposed that animals play a role as a stress buffer that softens the impact of stressful events. She suggested this theoretical construct after finding that elderly people with companion animals, especially dogs, did not increase their medical visits during times of life stress events; elderly people lacking animals characteristically increased their medical visits following stressful life events.

The stress of going out into the world with a disability or working in a dangerous environment as a police officer can be reduced by the constant companionship of a working dog that also offers assistance with instrumental tasks. The officer in Fig. 7 presumably feels more comfortable in the workplace with his canine companion. It is common for people with a service dog or a police dog to value the dogs' psychosocial contributions above the instrumental assistance; in addition to extraordinary companionship, the dog facilitates social interactions, as shown in Fig. 8 (Paul Knott, personal communication,
IV. INDIVIDUALITY IN HUMAN RESPONSES TO ANIMALS

The psychosocial effects described here should not be taken as evidence to prescribe companion animals generally to individuals who are lonely or depressed. The effects of a particular animal can be positive or negative, varying

FIGURE 7 A canine partner offers great comfort and companionship to an officer.

1999). As shown in Fig. 2 in Chapter 5, people with hearing dogs most frequently mentioned companionship as a pleasure of having the dog, although a statistical comparison with the pleasure of a hearing dog's service was not tested (Hart et al., 1995).
FIGURE 8 The enhanced social acceptance facilitated by a service dog may be more significant than the service tasks the dog performs.

with the person and the context. Responses to animals are a highly individual matter, depending on the person’s previous life experience with animals, the person’s current health and responsibilities, and the species and breeds of animals. Thus, individuals who have had dogs or cats in their early childhood would be more likely to respond to animals in later life than would people with little animal experience. In general, in middle and older age, people are drawn to the species and perhaps even breeds they had previously enjoyed (Kidd & Kidd, 1989). However, medical, economic, and housing situations may limit the practicality of acquiring the most favored species and breed.

A. Personal History with Animals during the Life Cycle

Small children are strongly attracted to their companion dogs and cats (Kidd & Kidd, 1987), as well as to other less familiar, small animals, such as a rabbit or turtle (Hunt et al., 1992). Children are strongly influenced in their feelings for dogs and cats by the attitudes and petkeeping of their parents and grandparents (Kidd & Kidd, 1997). By the time people are adults, they have a wealth of memories of experiences with animals, including positive and negative
occasions that may enhance or attenuate their responses to particular animals. There are no naive subjects. Efforts to offer AAA/T or provide enhanced contact with animals generally offer a particular type of experience, one that is not tailored to the specific preexisting attachments that each individual person has had with animals. Many of us have a particular breed that we strongly prefer. A woman who has always kept a German shepherd is likely still to retain that strong preference, even when she is in her eighties and weighs far less than the dog. Offering her a bird or a cat, though safer, may not be desirable or helpful to her. One size does not fit all.

It perhaps seems paradoxical that old age is the period when people are most strongly and deeply attached to their animals, yet this also is the age where the lowest percentage of people keep animals. The people who are most likely to benefit from companion animal ownership are the least likely to have companionship with animals (Poresky & Daniels, 1998).

B. ATTACHMENT AND COMPATIBILITY

The psychosocial benefits of companion animals are strongest when the person is strongly attached to the animal (Garrity et al., 1989). In a recent study, people who were relatively more compatible with their pets reported better mental health overall and fewer physical symptoms; thus, the fit between the animal and the owner on physical, behavioral, and psychological dimensions, as measured by compatibility, also is a key to enjoying psychosocial benefits in companion animal relationships (Budge et al., 1998). Typically, optimal attachment and compatibility are more likely when the animal is of the person’s preferred species and breed.

Some preliminary results suggested that dogs were more salient for participants than cats in maintaining morale in the family (Albert & Anderson, 1997). However, other work has presented evidence that cats may elicit attachment as strongly as dogs (Zasloff & Kidd, 1994a). These studies are consistent with the view that psychosocial benefits of pets relate to the companionship they offer, not usually to the instrumental or physical assistance they may provide.

IV. CONCLUSIONS

This chapter has emphasized the role that companion animals play in people’s quality of life. Although these contributions can enhance anyone’s life, they are especially crucial for persons whose network of social support is limited. Abundant research literature on human social support has documented the essential role of relationships for avoiding early mortality and morbidity. Ani-
mals, by offering meaningful love and comfort, provide support that is somewhat of a substitute when human companionship is lacking. Animals can play a major positive role in people's lives, particularly if the animal is well suited to the person's living situation, the person is able to easily manage caring for the animal, and behavior problems are avoided.

Health professionals thus have an opportunity to provide leadership in assisting in individualized pet placements with follow-ups to increase the rate of success and anticipate problems before they become serious. Many volunteers who currently bring animal-assisted activities to individuals residing in institutions with guidance could assist precarious individuals still living within the community. Such leadership is also needed to develop new creative solutions for offering more flexible means of having continued contact with animals in later life, but associated with less demanding responsibilities (Peretti, 1990). Community-based councils that include the various constituencies concerned with human and animal health would be well positioned to begin tackling these challenges.

REFERENCES


