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CHAPTER 2

Animal-Assisted Interventions in Mental Health: Definitions and Theoretical Foundations

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I. INTRODUCTION

As described in Chapter 1, the advent of scientific medicine toward the end of the 19th century had the effect of displacing companion animals from therapeutic settings until the 1960s, when the concept was revived in the writings of Boris M. Levinson. In his book *Pet-Oriented Child Psychotherapy*, Levinson described the benefits that his dog brought to his counseling sessions with children and youth and provided numerous examples of ways in which animals could enhance therapy (Levinson, 1969). Levinson intended for this material based largely on case studies and anecdotes to inform and encourage future research into the various beneficial effects that he observed. While this has occurred to some degree, more often Levinson's writings have been used to justify the implementation of animal-assisted interventions (AAIs) in the absence of valid efficacy studies.

Despite their long history and the unequivocally positive media attention they typically receive, animal-assisted interventions are currently best described as a category of promising complementary practices that are still struggling to demonstrate their efficacy and validity. Some attempts have been

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made to standardize terminology and procedures, and various certificate programs are now being offered in association with colleges and universities. However, if the field is to move beyond its fringe status, it must begin to follow the path taken by other alternative and complementary therapies (e.g., acupuncture, chiropractic) that have established their credibility by means of carefully controlled clinical trials and valid efficacy studies. With that objective in mind, the goals of this chapter are to clarify the distinction between therapy and other assistive or recreational uses of animals and then to explore some of the theories that underlie the incorporation of animals into therapeutic contexts.

II. DEFINING ANIMAL-ASSISTED INTERVENTIONS

In their critical review of the literature on animal-assisted interventions, Beck and Katcher (1984) aptly state that "a clear distinction should be made between emotional response to animals, that is, their recreational use, and therapy. It should not be concluded that any event that is enjoyed by the patients is a kind of therapy." Although this statement was made more than 20 years ago, the term *animal-assisted therapy* continues to be applied to an array of programs that would not qualify as therapy in any scientific/medical sense of the word. The *Oxford English Dictionary* (1997) defines *therapy* as "the medical treatment of disease; curative medical or psychiatric treatment." In contrast, *recreation* is defined as a "pleasant occupation, pastime or amusement; a pleasurable exercise or employment." Despite the obvious distinction, there is a tendency in certain quasi-medical fields to weaken or confuse the meaning of the word *therapy* by linking it to experiences that may provide transient relief or pleasure but whose practitioners cannot ethically or credibly claim to diagnose or change the course of human disease (e.g., aromatherapy, massage therapy, crystal/gemstone therapy). Regrettably, this is also the case with many programs that are promoted as animal-assisted therapy. Just as we would not refer to a clown's visit to a pediatric hospital as clown-assisted therapy, the urge to call animal recreation and visitation programs therapy should be resisted.

In her review of the literature, LaJoie (2003) reported finding 20 different definitions of animal-assisted therapy (AAT) and 12 different terms for the same phenomenon (e.g., pet therapy, pet psychotherapy, pet-facilitated therapy, pet-facilitated psychotherapy, four-footed therapy, animal-assisted therapy, animal-facilitated counseling, pet-mediated therapy, pet-oriented psychotherapy, companion-animal therapy, and co–therapy with an animal). This multiplicity of terms and definitions creates confusion both within the field and without. In an attempt to promote the standardization of terminology, the Delta Society

(n.d.), one of the largest organizations responsible for the certification of therapy animals in the United States, has published the following widely cited definitions of animal-assisted therapy and animal-assisted activity.

- Animal-assisted therapy: AAT is a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAT is directed and/or delivered by a health/human service professional with specialized expertise and within the scope of practice of his/her profession. Key features include specified goals and objectives for each individual and measured progress.
- Animal-assisted activity: AAA provides opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance quality of life. AAAs are delivered in a variety of environments by specially trained professionals, paraprofessionals, and/or volunteers in association with animals that meet specific criteria. Key features include absence of specific treatment goals; volunteers and treatment providers are not required to take detailed notes; visit content is spontaneous.

Although the Delta Society lists horses as being animals eligible for certification through their PetPartners program, interventions involving the use of horses typically fall under the jurisdiction of a separate group of agencies. Prominent among these is the North American Riding for the Handicapped Association (NARHA), its subsection the Equine Facilitated Mental Health Association (EFMHA), and its affiliate partner the American Hippotherapy Association (AHA), which provide separate definitions for the terms *equine-facilitated psychotherapy* (EFP) and *hippotherapy*.

- EFP is an experiential psychotherapy that includes equine(s). It may include, but is not limited to, a number of mutually respectful equine activities, such as handling, grooming, longeing (or lunging), riding, driving, and vaulting. EFP is facilitated by a licensed, credentialed mental health professional working with an appropriately credentialed equine professional. EFP may be facilitated by a mental health professional that is dually credentialed as an equine professional (EFMHA, 2003). EFP denotes an ongoing therapeutic relationship with clearly established treatment goals and objectives developed by the therapist in conjunction with the client. The therapist must be an appropriately credentialed mental health professional to legally practice psychotherapy and EFP (EFMHA, 2005).
- Hippotherapy is done by an occupational, physical, and speech therapist who has been specially trained to use the movement of the horse to facilitate improvements in their client/patient. It does not teach the client how to ride the horse. Therapists use traditional techniques such as

neurodevelopmental treatment and sensory integration along with the movement of the horse as part of their treatment strategy. Goals include improving balance, coordination, posture, fine motor control, improving articulation, and increasing cognitive skills (AHA, 2005).

While we include specific definitions of EFP and hippotherapy for the sake of comparison and completeness, the Delta Society definition of AAT is general enough to include these sorts of interventions. What should be emphasized is that these definitions of animal-assisted therapy, equine-facilitated psychotherapy, and hippotherapy all share the following attributes.

1. The intervention involves the use of an animal or animals.
2. The intervention must be delivered by or under the oversight of a health/human service professional who is practicing within the scope of his/her professional expertise.

It should be noted that the Delta Society definitions include statements about the need for participating animals to "meet specific criteria," whereas those utilized by the EFMHA and AHA do not. Ensuring the suitability of an animal for any type of work is of paramount importance for both the animals and the humans involved, and many facilities do require a formal behavioral evaluation prior to allowing animals to interact with clients or patients. However, the criteria by which animals are determined to be suitable for this work are highly variable and often subjective, and what particular interventions require from animals may be diverse and changeable (e.g., some practitioners see a benefit to using skittish or behaviorally challenging animals with particular clients). It is also worth mentioning that formalized behavioral screenings and certifications are not available for all species being used as therapeutic adjuncts, so while these assurances are desirable when available, their absence does not necessarily disqualify a program from being considered therapy. Questions regarding an animal's suitability for therapy work arise primarily from risk management considerations (e.g., patient safety; liability issues) and concerns about animal welfare. However, these considerations are extraneous to a general definition of therapy. Certainly, such issues should be given top priority when developing and implementing AAIs, but they do not help us define therapy, as an intervention can still achieve therapeutic goals without formal criteria being met by the participating animal(s) (see, e.g., Wells and colleagues [1997] on the use of feral cats in psychotherapy).

While it would be preferable for this chapter to include only information from studies and programs that adhere strictly to the definition of AAT outlined earlier—specifically those that are facilitated by health/human service professionals within the scope of their professional expertise and that have clear treatment goals—too few studies and programs fulfill all the necessary criteria. Therefore, for the purposes of this chapter, animal-assisted therapy,

animal-assisted activities, and various equine-facilitated programs are grouped together under the more general term *animal-assisted interventions*—defined here as "any intervention that intentionally includes or incorporates animals as part of a therapeutic or ameliorative process or milieu." The *Oxford English Dictionary* (1997) defines *intervention* as "the action of intervening, 'stepping in', or interfering in any affair, so as to affect its course or issue." This definition provides the flexibility needed to discuss programs that can fit within a medical model and those of a more quasi-medical nature but which still seek to "affect the course" of people's lives in a positive direction.

Guide, assistance, and service animals are purposefully excluded from the aforementioned definition of AAIs. The Americans with Disabilities Act of 1990 (ADA) defines a *service animal* as "any guide dog, signal dog, or other animal individually trained to provide assistance to an individual with a disability" (United States Department of Justice [USDOJ], 1996). The role of the service animal, as defined by the ADA, is to perform some of the functions and tasks that the individual cannot perform as a result of their disability (USDOJ, 1996). While the use of a service animal may provide some psychological benefits to its handler (e.g., decreased feelings of loneliness and isolation, or increased socialization), and not withstanding the nascent use of psychiatric service dogs (Psychiatric Service Dog Society, 2003), service animals are typically viewed as tools rather than treatments and thus do not constitute an animal-assisted intervention as we define the term.[1,2]

III. THEORETICAL FRAMEWORKS

The field of animal-assisted interventions currently lacks a unified, widely accepted, or empirically supported theoretical framework for explaining how

[1] It should be noted that because service animals are not legally considered pets, the ADA includes special provisions that allow for service animals to accompany their handlers into businesses and public places where pets are typically prohibited; the same is not true of therapy animals. While obtaining the status of "therapy animal" may provide a pet with limited entrée into places where animals are typically prohibited (e.g., hospitals, nursing homes, psychiatric facilities), therapy animals and their handlers are not granted any rights or protections under the ADA.

[2] An emerging issue in this field is the growing use of emotional support animals (ESA). The role these animals play has blurred the boundaries among pet ownership, mental health treatment, and the use of service animals. Unlike guide and service animals, ESAs do not necessarily receive special training, perform specific tasks, or accompany their handlers outside the home. Although very little authoritative information has been written on the topic, it appears that in order for an animal to qualify as an ESA, a healthcare provider must simply prescribe the animal for a patient with an emotional disability. In many cases, this prescription is all that differentiates ESAs from pets. As of this writing, ESAs are a controversial issue, with some suggesting that ESAs are an abuse and misinterpretation of the intent of the ADA (Grubb, 2002), whereas others seek to characterize ESAs as bona fide service animals (Bazelon Center for Mental Health Law, n.d.).

and why relationships between humans and animals are potentially therapeutic. A considerable variety of possible mechanisms of action have been proposed or alluded to in the literature, most of which focus on the supposedly unique intrinsic attributes of animals that appear to contribute to therapy. Others emphasize the value of animals as living instruments that can be used to affect positive changes in patients' self-concept and behavior through the patients' acquisition of various skills and acceptance of personal agency and responsibility. This section presents an overview of the theories found most commonly in the literature and, in some cases, those that seem to offer the best frameworks for future study.[3]

A. Intrinsic Attributes of Animals as Contributors to Therapy

The notion that animals possess certain inherent qualities that may facilitate therapy is widespread in the AAI literature. According to this view, the mere presence of the animal, its spontaneous behaviors, and its availability for interaction may provide opportunities and confer benefits that would be impossible, or much harder, to obtain in its absence.

1. Reduction of Anxiety and Arousal

The idea that the presence of, or interactions with, animals can produce calming effects in humans is commonly cited in the AAI literature. One popular explanation for this phenomenon is derived from E. O. Wilson's (1984) so-called *biophilia hypothesis*. This theory asserts that humans possess a genetically based propensity to attend to, and be attracted by, other living organisms (Kahn, 1997) or, as Wilson put it, an "innate tendency to focus on life and lifelike processes" (as cited in Gullone, 2000). The foundation of biophilia is that from an evolutionary standpoint, humans increased their chances of survival through their attention to, and knowledge of, environmental cues. Clinically speaking, it is hard to imagine a better pairing of attributes—a tool that can simultaneously engage and relax the patient. To quote Melson (2001):

[3] At this point we need to acknowledge a personal bias. Animal-assisted interventions are practiced with individuals at virtually every stage of life and with a vast array of mental and physical diagnoses. Our previous work in this area focused largely on animal-assisted interventions in adolescent mental health (Kruger *et al.*, 2004), and consequently, much of what appears in this chapter is a reflection of that narrow exploration of this broad and highly diverse field. We have tried nevertheless to ensure that the information included here is relevant to interventions practiced with individuals of all ages and with a wide variety of mental health diagnoses.

> [Watching] animals at peace may create a coupling of decreased arousal with sustained attention and alertness, opening the troubled child to new possibilities of learning and growth. The child can then experience unconditional love and models of good nurturing, practice caring sensitively for another, and assume mastery tempered with respect.

Although there are abundant references in the literature that suggest the presence of animals can sometimes exert calming or dearousing effects on people (Bardill and Hutchinson, 1997; Brickel, 1982; Friedmann *et al.*, 1983; Mallon, 1994a,b; Mason and Hagan, 1999; Reichert, 1998; Reimer, 1999), there are no convincing data demonstrating that these effects are due to any innate attraction to animals. Additionally, Serpell (1996) points out that "it has been known since the 1950s that any stimulus which is attractive or which concentrates the attention has a calming effect on the body," suggesting that animals may be just one means to this end. Moreover, even proponents of biophilia acknowledge that individual experience and culture play important roles in determining people's responses to animals (Kahn, 1997; Serpell, 2004).

Brickel (1985) offers learning theory as another explanation for the potential anti–anxiolytic benefits of animals in therapeutic contexts. According to learning theory, an activity that is pleasurable will be self-reinforcing and will be more likely to occur in the future. Unpleasant or anxiety-provoking activities, e.g., enduring painful or embarrassing visits to a therapist, may result in avoidance or withdrawal behavior. Just as enjoyable activities are self-reinforcing, avoidance of pain and discomfort provides a negative reinforcement by assuring minimal exposure to the painful stimulus. Brickel (1982) suggests that animals introduced in a therapeutic context may serve as a buffer and divert attention from an anxiety-generating stimulus that the patient faces. This interference allows for self-monitored control over exposure to the stimulus instead of withdrawal and avoidance (e.g., a child may choose to reveal sexual abuse first to the therapy animal rather than revealing it directly to the therapist). If the theory holds, repeated exposure through the animal's diverting properties, together with nonaversive consequences, should result in the reduction or extinction of anxiety. Brickel does not offer an explanation for why animals, in particular, are apparently so diverting, and it is presumably necessary to resort to other theories to account for this.

While evolutionary and learning theories have not adequately explained why some humans report feeling calmer when an animal is present, numerous researchers have attempted to examine and measure various human physiologic responses to interaction with animals. Studies that have focused on the anti–anxiolytic effects of an animal presence have typically measured heart rate and blood pressure as indicators of arousal (DeMello, 1999; Friedmann *et al.*, 1980, 1983; Katcher *et al.*, 1983), although a subset of studies have collected information on additional variables such as skin temperature, behavioral

manifestations of stress, state/trait anxiety, and levels of cholesterol, triglycerides, and phenylethylamine in the plasma (Anderson *et al.*, 1992; Freidmann *et al.*, 2000; Hansen *et al.*, 1999; Nagengast *et al.*, 1997; Odendaal and Lehmann, 2000; Wilson, 1991). As with much of the literature on AAIs, findings in this area are conflicting and, regrettably, fundamental methodological differences between the studies make it impossible to draw any firm conclusions about the impact that animals may have on human arousal, as both positive and negative effects have been reported.

Based on all of the available research, the most credible conclusion that one can draw at this stage is that the presence of certain animals can produce calming effects for some people in some contexts, but Wilson's (1991) finding that interacting with an animal was more stressful than reading quietly does highlight the need for studies that compare animal-assisted interventions with activities with similar aims but that do not incorporate animals. In other words, a finding that the presence of an animal decreases arousal does not rule out the possibility that other interventions or activities that do not include animals may be as, or more, effective.

2. Social Mediation

The observation that animals can serve as catalysts or mediators of human social interactions and may expedite the rapport-building process between patient and therapist is often noted in the AAI literature. AAI practitioners and theorists have suggested that animals stimulate conversation by their presence and unscripted behavior and by providing a neutral, external subject on which to focus (Fine, 2000; Levinson, 1969). Studies that have attempted to look at the social-facilitation effects of animals have produced similarly positive results across a range of populations (e.g., children with physical disabilities; the elderly; college students; typical dog owners; and adult and adolescent psychiatric inpatients). Also, drawing from psychoanalytic theory, there are ample references in the AAI literature to patients being able to reveal or discuss difficult thoughts, feelings, motivations, conflicts, or events by projecting them onto a real or fictional animal (Mason and Hagan, 1999; Reichert, 1998; Reimer, 1999; Wells *et al.*, 1997; Serpell, 2000). Reichert (1998) provides this example from her clinical experience with a sexually abused child:

> I told one child that Buster [a dog] had a nightmare. I then asked the child, "What do you think Buster's nightmare was about?" The child said, "The nightmare was about being afraid of getting hurt again by someone mean."

In support of the notion of expedited rapport building, several studies conducted with college students produced evidence that people are perceived as happier, friendlier, wealthier, less threatening, and more relaxed when they

appear in a picture with a friendly animal versus how they are perceived when the same picture is shown with the animal omitted (Lockwood, 1983; Rossbach and Wilson, 1992; Wells and Perrine, 2001). In three studies that examined a small number of subjects walking with and without their dogs in familiar and unfamiliar areas, all found significant increases in positive social interactions with strangers when the dogs were present (Eddy *et al.*, 2001; Mader *et al.*, 1989; Messent, 1983). Finally, in a seminal pilot study, Corson and colleagues (1977) investigated the impact of a dog-walking program on a small number of adult and adolescent psychiatric inpatients ($n = 50$, with only five subjects being studied in-depth) who were considered to be socially withdrawn and unresponsive to other forms of treatment. The quantitative findings of this study included decreases in the response time to questions posed by the therapist, exponential increases in the number of words used in responses, and increases in the percentage of questions answered.

Studies of the ability of animals to alter perceptions of social desirability and to increase positive social interactions between strangers have been uniformly positive. When considered alongside the large numbers of anecdotal statements attesting to the power of animals to hasten the building of rapport between patient and therapist, as well as to facilitate meaningful interaction between the two, these findings have important healthcare implications. If the presence of an animal can make the therapist appear happier, friendlier, less threatening, and more relaxed, it seems reasonable to believe that some patients would achieve a greater sense of comfort more quickly. In addition to enhancing the patient's perception of the healthcare provider, the presence of an animal provides a benign, external topic of conversation on which to focus, which may further hasten and enhance the development of a working alliance. Given that compliance and retention in treatment, as well as treatment outcomes, may be strongly related to the quality of the therapeutic relationship, this particular aspect of animal-assisted interventions merits urgent investigation.

3. Attachment Theory, Transitional Objects, and Social Needs

The AAI literature abounds with anecdotal statements concerning the loving bonds that are forged between humans and animals (Bardill and Hutchinson, 1997; Harbolt and Ward, 2001; Kale, 1992; Mallon, 1994b), with the implication that these attachments are part of what helps clients achieve therapeutic gains. With regard to attachment, Triebenbacher (1998) writes,

> Humans have an innate, biologically-based need for social interaction, and this interaction becomes increasingly focused toward specific figures. Behaviors such as following, smiling toward, holding, and touching are evident in the reciprocal relationship between child and attachment figure. . . . These behaviors can be exhibited

not only toward primary attachment figures but substitutes or supplemental figures as well.

Certainly, the behaviors that Triebenbacher describes can be observed in human interactions with animals, and there is no question that people form attachments with animals, but correlations between attachment and positive therapeutic outcomes have yet to be convincingly established in relation to AAIs. Theories related to attachment and social needs are, nonetheless, conceptually helpful in developing an understanding of the potential value of incorporating animals into therapeutic contexts.

Encompassed within the broad concept of attachment is the phenomenon of the "transitional object." While transitional objects are primarily considered the purview of very young children, the existence of a transitional effect in AAIs is alluded to sufficiently often in the literature (Katcher, 2000; Levinson, 1970, 1978, 1984; Mallon, 1994b; Reichert, 1998; Triebenbacher, 1998) to warrant further attention. The transitional object, as defined by Winnicott (1951), is an item or object, such as a blanket or soft toy, that serves a comforting function for a child and helps alleviate the normal developmental stress of separation from the primary caregiver (Cwik, 1991). In therapeutic contexts, animals are often described as alleviating the stress of the initial phases of therapy by serving a comforting, diverting role until the therapist and patient have developed a sound rapport.

While animals may serve as both attachment figures and transitional objects, it is important to note that the roles of attachment figure and transitional object are, by definition, mutually exclusive. "Attachment" implies a long-lasting emotional bond, whereas "transitional" implies a passage from one condition to another and the absence of a lasting bond. To quote Cwik (1991), "The fate of the [transitional] object is that it slowly loses meaning as transitional phenomena spread out over the child's whole cultural field." In the context of animal-assisted interventions, the role of the animal as a transitional object would appear to be more therapeutically desirable than that of an attachment figure. The purpose of a transitional object is to act as a bridge to a higher or more socially acceptable level of functioning, not to serve as a substitute for failed or inadequate human relationships. This is not to say that forming emotional bonds with animals should be entirely discouraged but that the fostering of strong attachments in the course of brief treatments may be ethically and therapeutically unsound.

Attachment is also one component of Robert Weiss' (1974) theory of "social provisions," a needs-based theory in some ways akin to Maslow's "hierarchy of needs" (1970), which assumes that some aspects of a person's psychological well-being can only be met through the medium of social relationships. In addition to attachment, Weiss (1974) included the need for social integration,

reassurance of worth, reliable alliance, guidance, and opportunities for nurturance among these necessary social provisions. Weiss's ideas permeate the AAI and "human–animal bond" literature, particularly in relation to the putative role of animals as outlets for nurturing behavior (Beck and Katcher, 1996; Enders-Slegers, 2000; Lapp and Scruby, 1982; Mallon, 1994a).

Finally, some mention should be made of the influence of Carl Rogers' (cited in Allen, 2000) ideas concerning "nonevaluative empathy" and "unconditional positive regard" in studies of both pet ownership and AAIs (see, e.g., Katcher, 1983). The twin notions that companion animals are "empathic," i.e., able to "sense" and respond to people's feelings and emotions, and unconditionally loving are cited so often in the AAI literature that they have acquired the status of clichés. Nevertheless, arguing from a Rogerian perspective, the potential value of animals as nonjudgmental confidantes and sources of unconditional positive regard might repay more detailed empirical investigation.

B. Animals as Instruments of Cognitive and Behavioral Change

A final set of theories relevant to this discussion concern the use of animals as living, interactive tools that can be used to help people see both themselves and the world in new ways and add new skills and responses to their behavioral repertoires. Although there is some overlap between these theories and those described in the previous section, what sets them apart is their emphasis on the formation of a working relationship between the patient and the animal. Most programs that incorporate equines draw heavily from these theories, as do programs that incorporate animal training and caretaking into their protocols.

1. Cognitive and Social Cognitive Theories

Cognitive and social cognitive theories are founded on the belief that there is a continuous reciprocal relationship among a person's cognitions, behavior, and environment (e.g., if I think I'm a bad person, I will behave like a bad person, and will therefore be treated like a bad person by those around me). The goal of therapy is to bring about positive changes in a person's self-perceptions—and hence their behavior—via improvements in, for example, self-esteem, self-efficacy, internalized locus of control, and so on. Learning and change take place through observation, imitation, direct instruction, and/or association (Allen, 2000; LaJoie, 2003).

The notion of wanting clients to learn appropriate behaviors through observation is common in the literature on animal-assisted interventions (Fine,

2000; Rice *et al.*, 1973; Taylor, 2001; Vidrine *et al.*, 2002) and is sometimes referred to as "modeling," a term first coined by Bandura and colleagues (1961). Another benefit often ascribed to AAIs is the ability of animals to help people learn about appropriate social interactions and the cause and effect of their behavior (Brooks, 2001; Nebbe, 1991). Animals are thought to be uniquely helpful in providing feedback on social behavior due to their unambiguous, "honest," and immediate responses to both pleasurable and aversive stimuli. Bardill and Hutchinson (1997) provide a clear example of this phenomenon:

> Graham [a cocker spaniel that lives in a closed adolescent psychiatric unit] responds positively and affectionately to acts of kindness many times during the day. Negative behaviors toward Graham, such as teasing or rough play, are responded to by Graham's avoidance of the perpetrator and peer pressure [from the other adolescents on the unit].

Three additional and interrelated aspects of social cognitive theory appear relevant to the use of animals in therapeutic roles: "self-efficacy," "performance accomplishment," and "personal agency." Self-efficacy is a belief in one's ability to perform behaviors that will create an expected and desirable outcome, and performance accomplishment involves the successful performance of a behavior that was once feared (Allen, 2000). These two concepts are related in that Bandura (cited in Allen, 2000) theorized that performance accomplishment was the single most efficient method for increasing feelings of self-efficacy. Also related is the notion of "personal agency," a condition in which people come to believe that they can make things happen that will be of benefit to themselves and others (Allen, 2000). Animal-assisted interventions are often structured around creating enhancement in these three realms.

Cognitive theories also offer us a reason to be circumspect in our enthusiasm about the benefits of animal-assisted interventions that aim to ameliorate feelings of helplessness or inferiority. As Newman and Newman (1995) remind us, the social environment does not reward all skills and achievements equally. It is extremely difficult for a person who does not excel in culturally valued skills to compensate through the mastery of others. Thus, if an intervention aims to provide long-term and generalized increases in feelings of self-efficacy, it needs to offer the acquisition of skills that are high in social desirability, offer a convenient means for continued learning (and thus continued positive feedback) after the end of the intervention, and offer a high likelihood of successful mastery. To date, there have been no long-term follow-up studies of the impact or efficacy of animal-assisted interventions. Although some have attempted to determine if changes in behavior could be observed beyond the context of the intervention (generally school and home) (Katcher and Wilkins, 1998; Kogan *et al.*, 1999), the results are conflicting,

and as yet no evidence exists that long-standing benefits are derived from participation in these programs.

2. Role Theory

Role theory is similar to social cognitive theory in that its emphasis is on the way the social environment shapes the developmental process. In this theoretical framework, a role is defined as any set of behaviors that has a socially agreed-upon function and an accepted code of norms (Biddle, Biddle, and Thomas as cited in Newman and Newman, 1995). The theory holds that as people enter new roles, they modify their behavior to conform to these role expectations (Newman and Newman, 1995). Obviously, whether these changes in behavior are positive or negative depend on the role that is assumed and the context in which it is assumed.

Interventions that aim to modify behavior sometimes do so by asking clients to assume a new role that may offer opportunities for learning and positive change. This differs from role playing in that rather than simply acting out a role, individuals actually assume a new role (Siegel *et al.*, n.d.). The rationale against using simple role play is that clients may see themselves as merely performing a part, and when they step outside the role, they may also stop the behaviors associated with it. Proponents of a role assumption approach believe that it offers a greater chance for the successful assimilation of new behaviors into a patient's repertoire (Siegel *et al.*, n.d.).

Numerous animal-assisted intervention models appear to fit within this theoretical framework, and to some extent, any program that provides individuals with an opportunity to train or care for animals allows the person to assume the role of teacher or caretaker (Brickel, 1985). Despite the compelling nature of the anecdotes that exist in the literature (Corson *et al.*, 1975; Rochberg-Halton, 1985), no evidence has been offered to suggest that the effects of role assumption are superior to role play, that benefits are long lasting, or that behavioral changes persist beyond the context of the intervention.

IV. SUMMARY AND CONCLUSIONS

Based on what we have presented, it is clear that despite the longevity of the practice of including animals in therapeutic contexts and the unvaryingly positive media attention that animal-assisted interventions receive, the field is still struggling to define itself and gain credibility as a form of complementary medicine. Recent attempts have been made to standardize terminology, but there has, as yet, been no formalized field-wide consensus on a particular set of

terms, definitions, and practices. There is, however, some agreement that therapy is distinct from other types of animal-centric activities and is set apart by the involvement of appropriately credentialed health/human services professionals and by the need for formalized treatment plans and goals.

As demonstrated, animal-assisted interventions draw from an impressive variety of disciplines and perspectives (e.g., genetics, biology, developmental psychology, psychoanalytic theory, behaviorism). Theories regarding the mechanisms responsible for therapeutic benefits tend to center on either the notion that animals possess unique attributes that can facilitate and contribute to therapy or the idea that developing a working relationship with an animal can lead to positive changes in cognition and behavior through the acquisition of novel skills and the acceptance of personal agency and responsibility. While impressive in their variety and scope, not a single theory that appears in this chapter has been adequately tested empirically, and most studies have returned equivocal or conflicting results when the necessary testing has been attempted.

To move the field of AAIs forward, studies must begin to focus on and answer some of the most basic research questions. With very few exceptions, the research that has been conducted to date has not been designed or controlled in ways that bring AAIs closer to becoming empirically supported treatments. Study samples have tended to be small, unrepresentative and heterogeneous, and without adequate control groups. In going forward, of utmost importance is the careful definition of the population under examination and what is to be measured, as well as a need for controlled designs and stated outcomes that are relatively impervious to expectancy and demand effects, and to self-report or personal interest biases (for information on developing controlled clinical trials, see the National Center for Complementary and Alternative Medicine, 2004). Additionally, most studies that have examined AAIs have reported on the positive benefits that are observed while in the context of the therapeutic milieu but have not examined whether these effects carry over into other contexts or if they are retained over time. Rigorous efficacy and effectiveness research conducted by individuals trained in clinical research and program evaluation is needed. In the absence of such research, and despite the many potential benefits that have been advanced in the AAI literature, the scientific and medical communities will continue to assume little or no long-term beneficial impact of these interventions.

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