Prison-based animal programs: A critical review of the literature and future recommendations

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Abstract
The present paper is a critical review of the literature on prison-based animal programs. Within the present review, the author examines the limited available research that has been conducted with these programs, and evaluates the utility of the research presented. Overall the implications are positive, including reduced recidivism; improved confidence, self-esteem, and responsibility; and improved vocational skills for inmates. However, this review highlights the limitations of research in this area, including few studies, small sample sizes, and primarily opinion-based results. Suggestions for future research are explored, including recommendations in designing prison-based animal programs and methods of measuring outcomes.

Degree Type
Dissertation

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PRISON-BASED ANIMAL PROGRAMS: A CRITICAL REVIEW OF THE LITERATURE AND FUTURE RECOMMENDATIONS

A DISSERTATION
SUBMITTED TO THE FACULTY
OF
SCHOOL OF PROFESSIONAL PSYCHOLOGY
PACIFIC UNIVERSITY
HILLSBORO, OREGON

BY
LAURA WHEATON, M.S.
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PSYCHOLOGY
JULY 26, 2013

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Abstract

The present paper is a critical review of the literature on prison-based animal programs. Within the present review, the author examines the limited available research that has been conducted with these programs, and evaluates the utility of the research presented. Overall the implications are positive, including reduced recidivism; improved confidence, self-esteem, and responsibility; and improved vocational skills for inmates. However, this review highlights the limitations of research in this area, including few studies, small sample sizes, and primarily opinion-based results. Suggestions for future research are explored, including recommendations in designing prison-based animal programs and methods of measuring outcomes.
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Prison-Based Animal Programs: A Critical Review of the Literature and Future Recommendations

Prison-based animal programs (PAPs), in which inmates are responsible for raising, caring for, working with, and/or training animals (Furst, 2006), have greatly increased in popularity since 2000. Although animals began appearing in various institutions around the world in the 1700s, most prison-based animal programs in the United States were established within the last decade (Furst, 2006). Although their benefits remain uncertain (Furst, 2006), the available research on programs of this kind has emphasized numerous advantages, including reduced recidivism; improved confidence, self-esteem, and responsibility; and improved vocational skills for inmates (Davis, 2007; Strimple, 2003; Turner, 2007). Reducing recidivism is important based on the economic implications of re-incarcerating parolees (Makarios, Steiner, & Travis, 2010; Schmitt, Warner, & Gupta, 2010). In a historical overview of these programs, Strimple (2003) remarked, “animal training programs in prisons will certainly increase in number as the benefits become known” (p. 74). This appears to be a common sentiment across researchers (cf. Furst, 2006; Harkrader, Burke, & Owen, 2004; Turner, 2007). Unfortunately, however, the noted outcomes of these programs are primarily based on anecdotal and subjective accounts of program benefits, as opposed to quantitative assessments (Furst, 2006; Lai, 1998).

Without empirically-based research about prison-based animal programs, it is difficult to determine if the benefits are due to the programs themselves or alternative factors (e.g., subjective perceptions or participant characteristics). In order to determine causality or correlations, researchers must control for various elements of participant
demographics. Many programs perform participant interviews prior to accepting them to
the programs (Furst, 2006). Program inclusion criteria can include various factors such
as psychological health, convictions, disciplinary infractions, work history, custody level,
education, and interest in the program (Furst, 2006). These stringent criteria result in a
lack of behavioral variance among the inmate research participants. In order to attain
generalizable results, it will be helpful to reduce some of the exclusion criteria within
prison-based animal programs. Future inclusion criteria could be broadened to include
participants with varying levels of psychological symptoms, crimes, behavioral
violations, employment history, supervision, education, and willingness to engage in the
program.

This literature review is comprised of five sections. The first section defines
several terms relevant to PAPs and will provide a foundation for understanding the
language used. The second section addresses the need for prison-based animal programs.
This section includes a review of inmate profiles, and the need for interventions for
inmates in the United States (U.S.). This is important due to the high concentration of
rehabilitation needs within the correctional system that have the potential to be addressed
by PAPs (Friestad & Kjelsberg, 2009). The second section also addresses the economic
implications of incarceration in the U.S..

The third section focuses on human-animal relationships, highlighting medical
and psychological benefits, and the settings in which animals are found. This is a critical
discussion because PAPs emerged from the research concerning the physical and
psychological benefits of human-animal relationships (Furst, 2006). As noted below,
animal-assisted therapy (AAT) was also derived from the literature on the benefits of the
human-animal bond (Hines, 2003); however, PAPs were focused on specifically because they have the potential to exceed the benefits of AAT, based on the additional potential gains, such as enhancing employment skills, increasing community relationships, and improving relationships between inmates and guards (Currie, 2008; Harkrader et al., 2004).

The fourth section focuses specifically on PAPs, and discusses the history of animals in institutions, and their utility in these facilities. It also reviews the limited research that has been conducted within some of the existing programs, as well as the obstacles and barriers to implementing PAPs and to studying them. The fifth section reviews future directions and specific recommendations for how to develop and research PAPs.

**Definitions**

In order to better understand the history, purpose, and focus of PAPs, it is first important to understand some of the key terms present in the research of these programs. The term “prison” will be used as a general term to incorporate the correctional facilities both adults and juveniles are housed within. These correctional facilities include, but are not limited to prisons, penitentiaries, and juvenile institutions. These facilities tend to be longer-term than jails and detentions centers, which are primarily used to house people who are awaiting trial (Bureau of Justice Statistics, 2012b; Hall, 2006; Snyder & Sickmund, 2006). The term “parolee” refers to an adult or juvenile who is on parole, “a period of conditional supervised release in the community following a prison term” (Glaze & Bonczar, 2010, p. 2). The term “inmate” will be used as a general term to describe people of all genders and ages who are housed within prisons. Another term that
will be used is “recidivism.” According to the Bureau of Justice Statistics (2012a), “recidivism is measured by criminal acts that resulted in the rearrest, reconviction, or return to prison with or without a new sentence during a three-year period following the prisoner's release” (para. 1).

Prison-based animal programs is a broad term for animal programs in prisons. The majority of programs work with dogs; however cattle, horses, pheasants, llamas, cats, rabbits, raccoons, birds, and fish are also involved in some programs (Barker & Dawson, 1998; Beck & Katcher, 2003; Furst, 2006; Katcher, Beck, & Levine, 1989; Wells, 2007, 2009; Wilson, 1991). The stated purpose of these programs is not to treat inmates’ physical or mental health problems; however, they have the potential to improve those problems based on the effects of human-animal interactions (Furst, 2006). The goals of these programs vary, but the main goals are generally to provide inmates with rehabilitation and vocational skills, to provide revenue for the prison, to aid in the well-being of the animals involved, and to establish positive connections within the community (Currie, 2008; Furst, 2006; Harkrader et al., 2004). These programs are typically designed to benefit not only the inmates, but also the correctional officers, prison administrators, outside community, and animals involved by potentially improving relationships and reducing costs due to reincarceration (Furst, 2006; Makarios et al., 2010; Schmitt et al., 2010; Strimple, 2003).

Animal assisted therapy (AAT), in contrast, “is a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process […] It is designed to promote improvement in human physical, social, emotional, and/or cognitive functioning,” (Delta Society, 2012, para. 1-2). Whereas AAT is “primarily
present for the benefit of the inmate” (Furst, 2006, p. 408), PAPs have the potential to benefit inmates in addition to others. Animal assisted therapy is typically implemented in conjunction with medical or mental health therapy (Barker & Dawson, 1998; Urichuk & Anderson, 2003). Animal assisted therapy will not be included as an area of evaluation within this paper, as the purpose of this dissertation is to examine the utility of working with animals with the majority of prison inmates, the prison system, and the community as a whole, rather than limiting it to a more narrow psychological and medical clinical population. PAPs and AAT were both established from the same literature base, but their distinction is important. While AAT has many benefits, PAPs have the potential to benefit a much wider population, as well as address a wider array of challenges.

**Need for Prison-Based Animal Programs**

**Inmate Demographics**

Proportionally, the United States incarcerates more people than any other country in the world (Prins, Oscher, Steadman, Robbins, & Case, 2012; Schmitt et al., 2010). The U.S. has over 2.3 million adults detained in prisons and jails, which is the second highest total detention number in the world (Prins et al., 2012; Sabol, West, & Cooper, 2010). Only China surpasses the U.S. in number of individuals imprisoned, but only when administrative detention facilities are included in that number (Prins et al., 2012; International Centre for Prison Studies, 2009). Furthermore, over 90,000 juveniles are incarcerated in the U.S. (Sabol et al., 2010). Throughout the U.S., individuals from minority and low socioeconomic status (SES) backgrounds, including people who have problems with drug abuse, mental health, and physical health, are overrepresented in prisons (Friestad & Kjelsberg, 2009). According to the Bureau of Justice Assistance
(2008) rates of serious mental illness of incarcerated people are “four times higher for men and eight times higher for women than found in the general population” (p. 2). Additionally, “nearly two-thirds of boys and three-quarters of girls detained in juvenile facilities were found to have at least one psychiatric disorder” (Bureau of Justice Assistance, 2008, p. 2).

Whitman (2009) explained that the disproportionate amount of individuals incarcerated in the U.S. is primarily due to the shift from equality in prosecution to equality in punishment (determinate sentencing) in the U.S. justice system over the last four decades. Prior to that change, sentencing was individualized and focused on rehabilitation as opposed to retribution (Whitman, 2009). However, since sentencing has become standardized for specific crimes, sentencing standards have been increased to be appropriate for the higher-level offenders. Additionally, American law is said to be “uniquely harsh” (Whitman, 2009, p. 148), based on the fact that instead of sanctions focusing on community service or fines, it uses incarceration as standard punishment.

The current nature of the U.S. justice system and the vast amount of people incarcerated in the U.S., in combination with the overrepresentation of people from minority and low SES backgrounds, with mental and physical health problems, and with drug abuse issues, contributes to the major financial consequences of incarceration within the justice system (Schmitt et al., 2010).

**Economic Implications**

According to Schmitt et al. (2010), “in 2008, federal, state, and local governments spent nearly $75 billion on corrections, with the large majority on incarceration” (p. 10). However, they believe that the cost could be reduced by $16.9 billion a year by “reducing
the number of non-violent offenders in our prisons and jails by half” (Schmitt et al., 2010, p. 2). Based on the astronomical cost of incarceration in the U.S., and the potential cost reduction that could result from reduced rates of incarceration, recidivism should be an area of focus. Recidivism could potentially be reduced through providing inmates with rehabilitation and skills.

Recidivism is a significant problem in the U.S. justice system, with estimates of 60-70% of prisoners and parolees released recidivating within 2 to 3 years of being released from prison (Bureau of Justice Statistics, 2012a; Makarios et al., 2010). Difficulties with employment are large predictors of recidivism, and “reductions in recidivism have been found in programs that offer vocational training” (Makarios et al., 2010, p. 1379). In addition to the potential benefits PAPs could have on inmate physical and mental health due to human-animal interactions, it is conceivable that PAPs could also reduce recidivism, based on their noted vocational benefits. Researchers indicate a presumed reduction in recidivism in comparison to average rates (Britton & Button, 2006; Currie, 2008; Deaton, 2005; Strimple, 2003; Turner, 2007).

**Human-Animal Relationships**

Extensive research has been conducted outlining the physiological and psychological therapeutic benefits of human-animal relationships, which are an integral component in PAPs (Furst, 2006; Hines, 2003; Urichuk & Anderson, 2003). The bond between animals and humans has been studied since the early 1970s, and has been shown to physically and emotionally enhance the lives of people who interact with animals (Hines, 2003; Urichuk & Anderson, 2003). Additionally, human-animal relationships have been looked at in a variety of settings and programs, as outlined below.
**Benefits: Medical and Psychological**

In general, all of these articles lack specificity regarding results; however, overall many researchers have revealed that interactions with animals, such as owning, being in the presence of, petting an animal, or talking to an animal have a relaxing influence on adult humans, including lowering blood pressure and anxiety (Barker & Dawson, 1998; Beck & Katcher, 2003; Katcher et al., 1989; Wells, 2007, 2009; Wilson, 1991). In 1989, Heath and McKenry speculated that similar effects would also occur with children. Since that time, more studies have been done specifically focusing on children (Beck & Katcher, 2003; Currie, 2008; Malakoff, 2009; Osborne & Bair, 2003; Woodley, 2004). They have found that interactions between children and animals led to some general improvements in children with emotional and behavioral difficulties, such as reduced anxiety and disruptive behavior, and improved communication and social skills. Human-animal interactions have also been shown to reduce symptoms of depression, including suicidal ideation, as well as serious mental illness; however the results are varied and specificity of results is limited (Furst, 2006; Osborne & Bair, 2003; Wells, 2007, 2009; Wisdom, Saedi, & Green, 2009). The research on the benefits of human-animal relationships is overwhelming, and should be a foundation in continuing to develop programs in prisons that utilize animals, given inmates’ vast array of physical and psychological needs (Felthous, 2009; Friestad & Kjelsberg, 2009).

**Settings**

Animals have been found in a variety of settings, including private homes, schools, universities, child welfare facilities, nursing homes, hospitals, and prisons (Beck & Katcher, 2003; Delta Society, 2012; Hines, 2003). Their utility in these settings is
broad, ranging from increasing the survival rate of coronary patients, to reducing stuttering in children (Beck & Katcher, 2003). As described above, animals have aided in improving both mental and physical health in humans (Barker & Dawson, 1998; Beck & Katcher, 2003; Katcher et al., 1989; Wells, 2007, 2009; Wilson, 1991). Although animal programs have been developed in various settings, I decided to look specifically at prisons. I chose this population because of the overrepresentation of mental health and medical needs within prisons (Friestad & Kjelsberg, 2009; Makarios et al., 2010). In addition, inmate rehabilitation is necessary in order to reduce recidivism, which may be addressed by the vocational training prison-based animal programs provide (Friestad & Kjelsberg, 2009; Makarios et al., 2010).

Prison-Based Animal Programs

Recent television programs such as “Cell Dogs” on Animal Planet have raised awareness of prison-based animal programs over the last decade; however, PAPs are not a new concept (Furst, 2006; Strimple, 2003). The following section will outline the history of animals being present in organizations, including psychiatric hospitals and prisons. It will also provide an overview of the literature on existing prison-based animal programs.

History

Records of animals appearing in organizations began as early as 1792, in England, weak and needy animals were introduced to help “teach the psychiatric patients self-control through positive reinforcement” (Furst, 2006, p. 409). Less than a century later, in 1867, animals were placed in a hospital in Germany to help treat epileptic patients (Furst, 2006). Dogs began appearing in psychiatric hospitals in the U.S. as early as 1919.
for the purpose of providing the patients with “chums and playmates” (Strimple, 2003, p. 71).

According to Currie (2008), Strimple (2003), and Urichuk and Anderson (2003), the first animal therapy program began unintentionally in 1975, after a patient at the former Lima State Hospital for the Criminally Insane (now the Oakwood Forensic Center) found an injured sparrow in the prison yard. He and some of the most acute patients worked together to care for the bird. The guards observed that while caring for the bird, the patients became less isolated and withdrawn, and interacted well with staff (Strimple, 2003; Urichuk & Anderson, 2003). After noting these benefits, the hospital decided to study the effects of animal interactions on the inmates (Currie, 2008; Strimple, 2003; Urichuk & Anderson, 2003). A 1-year study comparing two identical wards was conducted by housing animals in one and not in the other. At the end of the study, it was observed that the men in the ward without animals were using two times the amount of medication, and had substantially more violence and suicide attempts than those with animals on their ward (Strimple, 2003; Urichuk & Anderson, 2003). The Oakwood Forensic Center still houses many animals including dogs, cats, parrots, goats, deer, and snakes (Urichuk & Anderson, 2003).

According to Britton and Button (2006), Currie (2008), Strimple (2003), and Urichuk and Anderson (2003), the first prison animal training program was created in 1981, by Sister Pauline (formerly Kathy Quinn), at Washington Correction Center for Women (WCCW) in Gig Harbor, Washington. The program trained rejected dogs that were rescued from the Tacoma–Pierce County Humane Society, and was run through Tacoma Community College (Currie, 2008; Strimple, 2003). In addition to the college
credits earned through the program, inmates also experienced improvements in self-esteem and vocational skills, determined by interviews with current and past inmate dog trainers, inmates who are not dog trainers, and prison staff (Currie, 2008). Today, PAPs appear in corrections settings in at least 36 states in the U.S., and also in Canada, England, Scotland, Australia, and South Africa (Furst, 2006; Lai, 1998).

**Available Research**

Eleven articles focusing on prison-based animal programs, including qualitative and quantitative research, program evaluations, and reviews of media regarding PAPs have been found in the literature. Six of the articles were either qualitative or quantitative studies, while the other four were anecdotal accounts of PAPs. They vary in populations examined from men, women, and juveniles. All programs assessed were in North America. There are some consistent results and themes across the qualitative research conducted. The problem is that it is difficult to draw conclusions about those outcomes for the following reasons: There are few studies; the sample sizes tend to be small; and the results are primarily opinion based. Additionally, there are only two quantitative studies available. Although the quantitative research did not contradict the results of the qualitative research, few significant differences were found between control and experimental groups. Most studies showed primarily positive results of PAPs, and very few negative outcomes (Britton & Button, 2006; Currie, 2008; Davis, 2007; Deaton, 2005; Furst, 2006; Harkrader et al., 2004; Katcher et al., 1989; Osborne & Bair, 2003; Richardson-Taylor & Blanchette, 2001; Strimple, 2003; Turner, 2007).

It is clear throughout the research that the impressions of PAPs, including those of inmates and correction staff, are very positive (Britton & Button, 2006; Currie, 2008;
Davis, 2007; Furst, 2006; Richardson-Taylor & Blanchette, 2001; Turner, 2007). The themes that were consistent throughout the qualitative research conducted were that inmates experienced: 1) increased patience, 2) improvements in self-esteem, 3) satisfaction in giving back to society, 4) a greater sense of freedom, 5) enhanced social skills, 6) reduced loneliness, 7) decreased stress, 8) increased sense of responsibility, and 9) stronger vocational skills (Britton & Button, 2006; Currie, 2008; Davis, 2007; Furst, 2006; Richardson-Taylor & Blanchette, 2001; Turner, 2007). While these results are consistent, the sample sizes tend to be quite small, and the outcomes are primarily based on opinions rather than empirical data.

Results of preliminary quantitative research have not been consistent with the results of the qualitative research conducted. Only two studies used quantitative methods to examine various outcomes of PAPs (Katcher et al., 1989; Richardson-Taylor & Blanchette, 2001). In 1989, Katcher and colleagues looked at disciplinary offenses based on 33 adult male inmates’ records 2 years prior to having an animal, and the year following getting an animal. The researchers examined the severity of offenses as well as the number of offenses. They used a control group of 13 inmates who were accepted into the program but had not yet received an animal. The inmates who had animals had a slight reduction in their number of offenses ($p<.08$), but no reduction in the severity of the violations. In addition, there were no significant differences in the number (0.78 compared to 1.08 in the control group) or severity (2.6 compared to 3.54) of offenses between the two groups (Katcher et al., 1989).

In 2001 Richardson-Taylor and Blanchette combined qualitative and quantitative methods. They used several quantitative scales and assessments, including Rosenberg’s
Self-Esteem Scale (RSE Scale; Rosenberg, 1965), Center for Epidemiologic Studies – Depression Scale (CES-D; Radloff, 1977), Russell and Cutrona (1988) UCLA Loneliness Scale (as cited in Richardson-Taylor & Blanchette, 2001), Spheres of Control Battery (SOC; Paulhus, 1983), and The Correctional Environment Status Inventory (Wolfus & Stasiak, 1996) to compare characteristics of adult female inmates within a PAP to inmates in the same prison who were not in the PAP.

According to Gray-Little, Hancock, and Williams (1997), the RSE Scale is a widely used measure that has been shown to have acceptable to high reliability (coefficient alpha = .72-.88) and good internal consistency. The CES-D has also been widely used, and has been shown to have high internal consistency (coefficient alpha = .85-.90) and reliability “for assessing the number, types, and duration of depressive symptoms across racial, gender, and age categories” (Radloff, 1977, p. 96). Russell (1996) reported that The UCLA Loneliness Scale was shown to have high reliability (coefficient alpha = .89-.94) and significant 12-month test-retest reliability (correlation = .73). Further, validity was measured among college students, nurses and teachers, and elderly populations and showed that the UCLA Loneliness Scale had high discriminant and construct validity across all populations examined (Russell, 1996). Paulhus (1983) reported that the SOC was developed over 2 years, using five psychometric studies. He reported that the subscale reliability was high (alpha = .75-.80), and that test-retest reliability correlations of >.90 at 4 weeks, and >.70 at 6 months were demonstrated. No research was found regarding the psychometric properties of The Correctional Environment Status Inventory. It was noted that the measures were chosen by the Program Evaluation Advisory Committee and Nova Institution staff specifically “with the
goals and objectives of the canine program in mind,” (Richardson-Taylor & Blanchette, 2001, p. 13).

Results of Richardson-Taylor and Blanchette’s (2001) study, based on 23 inmates assessed (12 PAP participants and 11 non-participants), indicated that there were no significant differences between the two groups for levels of self-esteem, depression, beliefs about locus of control, and views of the prison environment. They did find that there were significant differences between the levels of loneliness between the two groups, with the inmates in the PAP experiencing less loneliness than those not in the program (Richardson-Taylor & Blanchette, 2001).

The following four articles anecdotally review PAPs or media regarding PAPs (Deaton, 2005; Harkrader et al., 2004; Osborne & Bair, 2003; Strimple, 2003). Two articles evaluated specific programs; however, their claims seemed to be primarily subjective (Osborne & Bair, 2003; Strimple, 2003). Osborne and Bair (2003) noted the following benefits of the PAP that they managed; however, on most accounts there was merely limited anecdotal evidence for the outcomes. For example, one inmate’s high blood pressure and anxiety decreased after becoming a dog trainer; one inmate no longer needed medication for hypertension after 2 months of dog training; two inmates discontinued their hunger strikes after one of the trained dogs was placed with them; and overall, the authors felt that the PAP “enhanced morale for both staff and inmates” (Osborne & Bair, 2003, p. 146). Strimple (2003) reviewed several existing PAPs and noted vocational training as a primary benefit, yet he did not cite any evidence of this benefit.
Two articles simply reviewed newspaper articles and media coverage about PAPs, and then made claims about the benefits of the programs (Deaton, 2005; Harkrader et al., 2004). Harkrader and colleagues (2004) reviewed media depictions of PAPs, and furthermore, directly observed a PAP. Following their communication with the prison counselor/puppy coordinator and the inmates in the program, they reported that the inmates involved in the program increased their responsibility, social skills, trust, patience, and positivity as a result of being in the program. Within this article, the results were not defined, and there were no explanations about how these outcomes were assessed. Deaton (2005) reviewed 16 newspaper articles published between 2000 and 2005 about horse and dog programs in correctional facilities. She reported that PAP benefits included work skills and experience, community service, and therapeutic advantages. However, she openly stated that “while these articles cannot provide any research-based evidence of the effectiveness of the programs, they inform the reader of current practices and reported benefits which might stimulate further interest” (Deaton, 2005, p. 52).

Overall, the potential benefits of PAPs are too encouraging to ignore, and they support the need for future research. Unfortunately, however, there are many problems with the limited research available, such as small sample sizes, lack of behavioral variance among participants (including inmates with few or no behavioral infractions), and an overall lack of empirical evidence for the claims. Future studies should continue to attempt to measure the perceived benefits and outcomes of PAPs through increasing sample sizes, broadening sample sizes, and tracking behavioral and symptom changes systematically.
Obstacles and Barriers

There are many barriers to implementing prison-based animal programs and to studying those programs. First, there are political, financial, and logistical challenges to implementing PAPs in prisons. Second, assuming these programs could be implemented, there are additional barriers to collecting meaningful data, such as small sample sizes, lack of behavioral variance among participants, and trouble receiving cooperation from prison personnel.

Many people who have attempted to incorporate animal programs in prisons have encountered resistance by those who believe that institutions should be exclusively punitive settings (Strimple, 2003). Additionally, financial support for PAPs is lacking, particularly due to potentially high start-up costs, which can include training and housing facilities, food and supplies for the animals, and veterinary expenses (Harkrader et al., 2004; Lai, 1998). These programs tend to rely heavily on fundraisers and community donations, and occasionally are funded by federal grants (Harkrader et al., 2004).

Conducting empirical, quantitative studies, in addition to qualitative research, would be ideal in order to gain detailed information about the benefits of PAPs. Several challenges exist with regard to systematically studying PAPs, including time, money, sample size, and the lack of diverse demographics, particularly in regard to behavioral infractions. When looking at factors such as recidivism, longitudinal studies are needed in order to determine results after the appropriate 3-year follow-up period (Bureau of Justice Statistics, 2012a). Further, many programs have relatively small sample sizes (Davis, 2007; Furst, 2006; Turner, 2007), so it might be necessary to increase the number of participants in order to make the findings more generalizable.
Perhaps the greatest obstacle is that of the exclusion criteria found in so many programs (Furst, 2006; Harkrader et al., 2004; Turner, 2007). In general, the inmates who participate in these programs already have the best records in the prison (Furst, 2006; Harkrader et al., 2004; Turner, 2007). Therefore, the likelihood of demonstrating meaningful change would be small because these inmates are already high functioning. For example, a major limitation of the research about these programs is that many of them require their inmates to be “honor inmates (those who have had no infractions during their terms)” in order to be involved in their animal programs (Harkrader et al., 2004, p. 75). Future directions in studying PAPs should attempt to determine if the alleged benefits of PAPs is caused by the programs themselves and benefits of animal interactions, or if they are secondary based on the stringent criteria some of the programs have for participant enrollment (Furst, 2006; Harkrader et al., 2004; Turner, 2007). Without looking at inmates who have more significant mental health or behavioral difficulties, it will be unreasonable to generalize any findings to people within these groups, and studies may yield arbitrary results. Overall, these barriers have resulted in “few controlled, empirically based studies” (Lai, 1998, p. 4).

**Future Directions and Recommendations**

Although there has been an increase in research of PAPs in recent years, there are still relatively little data regarding the various programs that exist. Based on the anecdotal evidence available, PAPs appear to have a multitude of benefits; however, the cause and validity of those benefits are not well researched. This literature review could inform psychologists, the general public, and corrections personnel of the potential benefits of PAPs. Based on the available information, development and research of
prison-based animal programs should follow some basic guidelines, and include some necessary pieces of information.

Developing prison-based animal programs requires coordination among several parties, which may be a barrier to implementing more PAPs throughout correctional systems. Parties involved include program facilitators or coordinators, institution staff, inmates (both directly and indirectly involved in the program), and community members (Richardson-Taylor & Blanchette, 2001). Additionally, funding can be a barrier to implementing these programs (Harkrader et al., 2004; Lai, 1998). Implementation of these programs can be facilitated through addressing potential gains provided in the form of proposals for grants or pilot projects (Richardson-Taylor & Blanchette, 2001). In one example, after outlining that the program “would provide benefits to the inmates’ physical and mental health, teach participants useful skills, enhance their self-esteem, improve inmate-staff relations and improve the community’s relationship with the institution” (Richardson-Taylor & Blanchette, 2001, p. 9) they were awarded a 1-year pilot project followed by a 3-year contract. Financial barriers can be addressed through fundraisers and donations, which for many PAPs cover the costs associated by the programs, as well as charging for the services provided by PAPs (Furst, 2006).

When setting up prison-based animal programs, it would be helpful to broaden inclusion criteria for participation in the program in order to research the behavioral and emotional effects of being in the program. Because so many programs have such rigid criteria for involvement in their programs (Harkrader et al., 2004), it is difficult to differentiate between the effects of the programs and the behavioral nature of the inmates involved in them. It would be advisable to limit inmates who have extensive histories of
animal abuse from the programs; however, opening them up to inmates who have emotional disturbances and behavioral infractions may aid in researching the reduction of these symptoms through these programs. These programs should all include vocational training in order to aid in the reduction of recidivism (Makarios et al., 2010).

Once prison-based animal programs have been implemented successfully, it will be important to track the outcomes of these programs in order to show their efficacy, and in some cases to attain or maintain funding. Some of the important pieces to track would be demographic information, symptom changes, behavioral changes, recidivism, overall attitudes about the program, and program income and expenses. Demographic information should include information about the inmates, including age, gender, race/ethnicity, socioeconomic status prior to incarceration, and crime. Symptom changes could examine emotional and mental health symptoms pre- and post-involvement in the program by using symptom checklists or outcome tracking measures. For example, the Beck Depression Inventory-II (Beck, Steer, & Brown, 1996) or the Beck Anxiety Inventory (Beck & Steer, 1993) could help determine if PAPs play a role in reducing symptoms of depression or anxiety. An outcome measure such as Outcome Questionnaire-45 (OQ-45; Lambert et al., 1996) could help establish overall changes in inmates’ symptoms, interpersonal functioning, and social role; however it may have to be modified to pertain more to inmates rather than outpatient clients. Behavioral changes could assess behavioral infractions pre- and post-involvement, as well as potential reduction in antisocial behaviors, measured through point systems, prison levels, or psychological assessments such as Achenbach’s Adult Self-Report (ASR) and Adult Behavior Checklist (ABCL; Achenbach & Rescorla, 2003). Attitudes about the program
should include those of the inmates involved in the program, as well as other inmates, facilitators of the program, prison staff and personnel, and prison administrators.

Two potential research designs for studying PAPs are A-B and A-B-A-B research designs. The first would be useful because it may be difficult to remove an inmate from the program for the second “A” baseline. However, an A-B-A-B research design would likely produce more information about the changes after involvement in a PAP. It would be important to determine if removing an inmate from the program temporarily (for the second “A” baseline) would be ethical. Some alternatives to removing the inmate from the program entirely would be rotating job responsibilities, where both the first and second “A” baselines are conducted while the inmate is performing a job that does not involve direct interaction with the animals, such as mucking empty kennels or stalls. It would be difficult to determine if the results were due to changes based on direct interactions with the animals, or involvement in the program itself. Positive results of PAPs demonstrated by the described tracking and research methods, such as increased prosocial behaviors and decrease emotional and mental health symptoms, could encourage extensive funding and implementation of PAPs.
References


