

Multicultural Considerations in Animal-Assisted Intervention

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Attitudes towards non-human animals and the conceptualization of the human-animal bond varies across cultures and population groups, thereby making it a crucial consideration in the field of animal-assisted intervention (AAI). The growing expansion of AAI practice to multicultural populations within and outside the US and Europe, necessitates a greater emphasis on the cultural considerations and implications involved. In this context, the present paper attempts to explore select examples of AAI practice outside the US and Europe, namely in South America with a specific focus on Brazil and in East and South-East Asia with a specific focus on Japan, India, and China. The paper also proposes a model for a greater incorporation of multicultural considerations in AAI encompassing the spheres of research, education, and practice, thus drawing from and expanding on current recommendations in the field.

Keywords: Animal-Assisted Intervention, Human-Animal Interaction, Multicultural considerations, Culture

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Culture is perhaps a most flexible and dynamic concept, lending itself to a multiplicity of definitions. Kroeber and Kluckhohn (1952) for instance, compiled more than 150 definitions of culture, comprising themes such as history, artifacts, values, behavior, language, learning, habits, genetics, ideas, symbols, environment and structures and Geertz (2000) nearly half a century later reported that the “trouble is that no one is quite sure what culture is” (p.11). The attempt to define culture by Asuncion-Lande (1975) is both fairly comprehensive and close to our common sense understanding of the concept. She defines

culture as “the sum total of the learned behaviors of a people, which are transmitted from generation to generation, which are generally considered to constitute their tradition and which serve them as potential guides for action”(p.67). This however also goes with an implicit understanding of the fact that cultures are not “uniform, total or totalizing entities” and rather are “variable, open and dynamic systems” (Marcus, Kitayama & Heiman, 1996, p.863). Hence the conceptualization of culture may vary both with and within the context used to define it.

Serpell (2004) while identifying culture as a modifier in the attitudes towards animals, divided cultural factors into four main and overlapping categories -history, cultural/religious beliefs and values, culturally defining practices and cultural representations. These categories can be seen to include the more commonly used contexts to demarcate culture such as ethnicity, language, and geography (Serpell, 2004). While trying to understand culture within these broad contexts is what is practically achievable, it becomes imperative to understand that these contexts are overlapping rather than independent. Also, for every individual operating within any of these contexts, his or her culture is a unique mix of social factors and individual attributes that are both numerous and evolving.

As elusive and complex as a concrete definition of culture may sound, equally important is its impact on human interactions with both other humans and non-human animals. Regarding the role of culture in human-animal interaction and animal-assisted intervention, certain facts are part of our current knowledge through their repeated emphasis in existing literature (e.g. Fujimura & Nommensen, 2017; Jegatheesan, 2015; Sheade & Chandler, 2014; Szucs, Geers, Jezierski, Sossidou, & Broom, 2012; Chandler, 2005; Serpell, 2004). These include-

- (a) An understanding that attitudes towards non-human animals and the conceptualization of the human-animal bond varies across cultures and population groups.
- (b) The fact that animals both at an individual and group level are laden with a significant amount of ‘cultural and symbolic baggage’ (Serpell, 2004, p.148) and hence culture becomes a crucial consideration in animal-assisted intervention (AAI).

In this context, it is also interesting to recognize that while the US today holds center stage for AAI research and practice, the field has slowly taken definitive baby steps across continents, thereby intensifying the need to analyze and appreciate cross-cultural corollaries. While an examination of the status of AAI in several regions outside the US would be most desirable, such an analysis would be outside the scope of this paper.

This paper, therefore, makes a modest attempt to explore select examples of AAI practice outside the US namely in South America with a specific focus on Brazil and in East and South-East Asia with a specific focus on Japan, India, and China. This exploration focuses on broadly detailing the practice of AAI as it exists, in these regions. Considering the limited published literature in the area of HAI/AAI in these regions, this paper relies on multiple sources of information including academic sources and popular literature. It primarily aims to inform of the existence of AAI practice across cultures and in regions beyond the US and Europe, as this information can form the essential first step in initiating a rigorous evaluation of their scientific credibility. Further, considering the growing expansion of AAI practice, this paper also proposes a framework for a greater incorporation of multicultural considerations in AAI expanding on current recommendations in the area.

Human-Animal Interaction (HAI), Animal-Assisted Intervention (AAI), animal regulations and public perception of animals in Brazil with a brief focus on the South American continent

According to the Brazilian Association of Pet Animals Industry and Products (Associação Brasileira da Indústria de Produtos para Animais de Estimação),

Brazil is the fourth country with the highest animal population in the world, following China, the United States and the United Kingdom (<http://abinpet.org.br/site/>). Brazil is also the second largest pet market in the world, after the United States (Walsh, 2009). Animal protection acts in Brazil are in place under the decree 24.645 of June 10th, 1934, which regulates the treatment and management of animals (Presidency of the Republic Civil House Sub-Office for Legal Affairs, 1934). The act number 9.605 of February 12th, 1998 oversees criminal and administrative sanctions derived from conduct and activities harmful to the environment and provides regulatory measures on animal welfare (Presidency of the Republic Civil House Sub-Office for Legal Affairs, 1998).

AAI Organizations and Research in Brazil

A community program in southern Brazil entitled “Community Dog Program” was established in 2014 to care for free-roaming dogs, and care was provided by community volunteers referred to as “maintainers”. Kwok and collaborators looked at the interactions between these dogs and the maintainers, as well as strangers. The authors found that both maintainers and strangers interacted with the dogs in a friendly way, both fed them, strangers physically punished them, and both human groups also tried to scare them away. The study suggested that the degree of human association with the dogs varied significantly, depending on the level of attachment between the humans and the dogs, with the maintainers being more tolerant of the dogs, even though the interactions between the dogs and both groups of people were brief (Kwok, Keyserlingk, Sprea, & Molento, 2016). The results of another project, “Pet Smile” in Sao Paulo, Brazil, involving AAI for children and adults in

healthcare institutions, reported lower levels of depression, a decrease in medical prescriptions and increased survival rates after heart attack (Nogueira & Nobre, 2015). Another successful AAI project “Dr. Escargot” was implemented by the Faculty of Veterinary Medicine and Animal Science at the University of São Paulo under the aegis of its “Projeto Amicão” which aimed at the humanization of the hospital setting. Positive results of the project in terms of an improved overall quality of life were reported by both patients and the hospital staff (Kobayashi et al., 2009).

For a broad overview of HAI/AAI research in Brazil we searched the Medline, Proquest, Scopus, Google Scholar, SciELO, and HABRI Central databases using the keywords “Human-Animal Bond (HAI)”, “Animal-Assisted Intervention (AAI)”, “Animal-Assisted Therapy (AAT)”, “Animal-Assisted Activities (AAA)”, “Animal-Assisted Education (AAE)”, “Canine assisted therapy”, “Equine assisted therapy” “Dolphin assisted therapy” and “Hippotherapy” in English and their Portuguese equivalents, where applicable. The studies (in English and in Portuguese-with or without English translations) though few, were found to focus on diverse areas of HAI, including the health benefits of AAI and perceptions towards AAI among various population groups.

A review of the relationship between people and farm animals showed that the rearing system, health management, genetics and cultural peculiarities in Brazil can have a strong influence on the quality of the interactions between workers in the dairy industry and animals, as well as on the productivity and welfare of the farm animals. The authors state that a majority of such studies are conducted in European countries and Australia, where the predominant intensive confined system differs from Brazil’s farming systems. Hence, more studies taking into consideration the diverse realities and cultural aspects of Brazil are

needed (Honorato, Hotzel, Gomes, Silveira, & Filho, 2012).

A study on the psychosocial aspects of elderly women living with pets in Brazil showed that pets fulfill their needs of social and affective contact. Without acknowledging the risks involved from a zoonotic standpoint, the study focused solely on the benefits of this interaction as a source of mental balance, given the solitary social lives of the participants (Costa, Jorge, Saraiva, & Coutinho, 2009). Another study on the psychological benefits of pets on the elderly in Brazil showed that pets fulfilled a variety of affective needs such as happiness, companionship, safety and distraction, and all participants described their pets as family members (Heiden & Santos, 2009).

Studies also reported the benefits of AAI in the hospital setting including improved mood and better quality of life in patients requiring long term hospitalization (Bussotti, Leão, Chimentão & Silva, 2005) and a decrease in self-reported pain in hospitalized children and adolescents (Ichitani and Cunha, 2016). Reported health benefits of AAI also included enhanced haptic perception and locomotor stability in adults when engaged in dog walking (Périco, 2013). Recent research also focused on the feasibility of the walk-trot protocol in equine therapy in children with Bilateral Spastic Cerebral Palsy and found immediate effects in terms of improvement in the gait spatio-temporal parameters and hip adductors spasticity (Antunes, 2016).

A qualitative study directed towards understanding the perception of nursing staff and family members of children and adolescents with cancer towards canine therapy, revealed that although participants in the study did not have an in-depth understanding of the therapeutic process involved in canine therapy, they viewed it as positive and entertaining (Moreira et al., 2016). A similar attempt to understand the

perception towards AAT in the educational setting revealed that although awareness regarding AAT was limited among pedagogical coordinators, teachers, parents and children, child-pet interactions and the implementation of AAT were viewed favorably by all the groups (Ferreira et al., 2016).

While most studies analyzed the impact of AAI on human well-being, Yamamoto (2012) used behavioral and biomarker indices including serum and salivary cortisol dosage, rectal temperature, systolic blood pressure and heart and respiratory rates to assess the impact on the animal, of being involved in therapy. Results of this study, involving nine therapy dogs (eight Labrador Retrievers and one Golden Retriever) reported no significant negative effects on the dogs due to participation in the intervention process.

The advantages of incorporating therapy animals for the benefit of humans have been long understood in Brazil. Concerns involved in AAI include assuring that practice is done by qualified professionals, in concordance with ethical rules, and the employment of therapeutic strategies that are adequate for the animals involved (Lima and Souza, 2004). Dogs have been for long not the only species involved in AAI in Brazil, but also cats (Berzins, 2000), and horses (Copetti, Mota, Graup, Menezes & Venturini, 2007).

The importance of the veterinarian in AAI has become more evident in Brazil. Tatibana and Costa-Val (2009) emphasized the role of the veterinarian and suggested that AAI should focus not only on the benefits to the human, but also take into consideration the physical capabilities and overall wellbeing of the animal species involved. They also emphasized the importance of veterinary care and zoonosis prevention, and the conduct of therapy by a qualified

professional, without compromising on the human-animal bond.

The scope for a greater understanding of the human-animal bond and its applications can also be seen in other South American countries. Argentina, for instance, is the Latin American country with the highest population of pets per habitant (78 of 100 Argentinians have a pet), with most of them being dogs (63%) followed by cats (26%). In the last twenty years, there has been an increasing interest in pet keeping due to the wellbeing that pets promote in human lives (Gentil, 2015). More research is needed in other South American countries, as suggested by Colombian authors Gutierrez, Granados, and Piar (2007). Peer-reviewed publications on HAI/AAI in Latin American countries are scarce, and there is a need for more controlled studies that take into consideration the cultural diversity in the Latin American population (Gutierrez, Granados & Piar, 2007).

Human-Animal Interaction (HAI), Animal-Assisted Intervention (AAI), animal regulations and public perception of animals in East and Southeast Asia: A focus on Japan, India and China

Japan

Japan's complex spiritual roots in Shintoism and Buddhism have had a fair share in influencing Japanese attitudes towards animals, with animals being viewed as kin and even assigned a divine status beyond kinship, within the religious context. Animal companionship has been historically viewed as a luxury as animals are seen as inspiring spirituality, emotional balance, comfort and playfulness, all which are valued greatly beyond the basic necessities in the Japanese society. The status of animal companionship in Japan has evolved with

time. Historically pets were largely owned by the upper middle classes, were limited to certain species such as exotic birds, purebred cats and lapdogs and were kept for their aesthetic value. Accordingly they were referred to as *aigan dobutstu* meaning "toy animal", which was also reflective of their status as playthings or possessions. However, the growth of the middle class in recent years has seen more breeds of pets being adopted and pets becoming more integrated into the households as companion animals. This is also evident in pets being now largely addressed as *katei dobutstu* or "family animal" in contemporary Japan, and the inclusion of animals in the Buddhist familial life-cycle rituals including rites of passage for the deceased (Fujimura & Nommensen, 2017).

According to annual investigations conducted by the Japan Pet Food Association (2016), it is estimated that 9.88 million dogs and 9.85 million cats are kept as companion animals in Japan, which is larger than the number of children (15.7 million) under the age of 15 years (Statistics Japan, 2017). The gradual yet steady increase in the national pet markets to 42.5 billion yen (about 37.6 million US dollar) in 2016 (Nikkei, 2017) and the opening of numerous petcafes providing opportunities for viewing, cuddling or walking various animal breeds (Fujimura & Nommensen, 2017), is also indicative of a similar trend.

The Act on Welfare and Management of Animals enacted in 1973 regulates animal use, testing and welfare in Japan. This comprehensive law on animal care in Japan has been revised thrice (the last being the 2012 amendment) to suit changing situations. While provisions in the legislation focus on companion and farm animals as also animals used in research, the safeguards provided are seen to be lacking when compared with international standards. Another criticism raised is that both the 1973 Legislation as also the focus of several non-governmental voluntary animal welfare organizations in

Japan, have been mainly on companion animals whereas farm and other animal rights have not been given due attention (Honjo, 2014). However, a positive factor to be noted is the growing concern for animal rights and welfare in Japan in recent years, as evident in the decreased numbers of culled dogs and cats at shelters (Ministry of the Environment, 2016) and the growing participation of citizens and several animal welfare organizations in seeking protection of the rights of both companion and farm animals (Honjo, 2014). The growing interest towards companion animals and the increasing concern towards animal care and welfare can be seen as largely conducive towards the growth of AAI in Japan.

Organizations providing AAI in Japan

With increasing research on the efficacy of AAI in Japan, the use of AAI has become more common particularly in the fields of health and education. Among the various organizations providing AAI in Japan, the Companion Animal Partnership Program (CAPP) activities by Japan Animal Hospital Association (JAHA) have a long history as pioneers in this field. The CAPP activities started in 1986 and 18,281 sessions have been provided in various facilities, such as nursing homes, hospitals, and elementary schools (JAHA, 2017). Many smaller groups and organizations are also involved in providing AAI in Japan and these include non-profit organizations specialized in AAI, colleges/universities with animal-related courses, working dog organizations including assistance dogs and search and rescue dogs, and local animal shelters. Notably, the first facility dog was introduced into Shizuoka Children's Hospital in 2010 and the facility dog and handler (a nurse) team are present at the hospital full-time (Morita and Minagawa, 2014). A few more teams have been introduced into other hospitals (St. Marianna University School of Medicine, 2015; Kitasato University, 2015) indicative of the gradual yet growing interest in the field of AAI in Japan.

In addition to organizations focusing on AAI practice, Japan has also seen the development of academic organizations in the field of AAI. There are four full member organizations of the IAHAIO in Japan: Society for the Study of Human-Animal Relations (HARs), Japanese Animal Hospital Association (JAHA), J-HANBS, and Knots (International Association of Human-Animal Interaction Organizations, n.d.). Among them, HARs is an academic organization established in 1995 and a wide variety of topics on human-animal interaction, including AAI, have been reported and discussed in its annual conferences. Additionally, a new organization—the Asian Society for Animal-assisted Education and Therapy (ASAET) specialized in AAI, organizes its annual conference since 2008.

AAI Research in Japan

A broad search of the Medline, Proquest, Scopus, Google Scholar and HABRI Central databases using the keywords “Human-Animal Bond (HAI)”, “Animal-Assisted Intervention (AAI)”, “Animal-Assisted Therapy (AAT)”, “Animal-Assisted Activities (AAA)”, “Animal-Assisted Education (AAE)”, “Canine assisted therapy”, “Equine assisted therapy” “Dolphin assisted therapy” and “Hippotherapy”, found that some AAI studies on the Japanese population have been published in the English language. A major area of focus in these well-cited studies conducted by Japanese researchers has been the impact of AAI on the geriatric population, especially those with dementia, with results reporting an improvement in geriatric mental functioning and increased social interaction (Kawamura, Niiyama & Niiyama, 2007; Motomura, Yagi & Ohyama, 2004; Kanamori et al., 2001). Other well-known studies on the impact of human-animal interaction have found positive effects of dog-walking/presence on autonomic nervous

activity in senior citizens (Motooka, Koike, Yokoyama & Kennedy, 2006) and the benefits of pet ownership among patients with lifestyle-related diseases, such as diabetes mellitus, hypertension, and hyperlipidemia, with pet ownership being independently and positively associated with HF and inversely associated with LF/HF (Aiba et al., 2012). More recently, it was reported that horseback riding improved the ability to perform Go/No-go tasks and solve arithmetic problems among healthy typical children. The researchers suggested that the horse's vibration is the most beneficial factor of horseback riding and the results obtained differed among the breed of horses used (Ohtani et al., 2017). Results from a recent study using near-infrared spectroscopy showed greater activation in the prefrontal cortex during human mentation of animals (through a viewing of animal images) which according to the authors, was also suggestive of the possible mechanisms involved in AAT efficacy (Morita, Ebara, Morita & Horikawa, 2017). In another recent and interesting study, Nakajima (2017) compared the effect of the Japanese system of animal rearing education that involves children caring for animals, with the effects of AAE which involves animals assisting children. The study suggested that animal rearing education which has for long been a popular part of the Japanese formal education system, can provide a new possibility for conventional AAE, although more empirical studies would be required to objectively ascertain its feasibility.

While these research studies represent the various types of AAI/HAI studies being conducted on the Japanese population, the number of HAI and AAI related publications in English language journals represents only a small fraction of the actual HAI/AAI research being done in Japan. For a broad overview of HAI/AAI studies published in Japanese, we explored the databases mentioned above using the same keywords in Japanese as

applicable. We also explored two journals published by HAI academic societies in Japan: the Society for the Study of Human-Animal Relations (HARs), and Asian Society for Animal-Assisted Education and Therapy (ASAET) (from the first issues till present date). The search results produced a significant number of research studies, conference abstracts and articles, with studies on varied population groups. Research participants included children in kindergartens, nursery schools and elementary schools, elderly people (nursing home residents, and those with dementia), children/adults with developmental disorders and physical disabilities such as cerebral palsy, individuals with psychiatric diagnoses, children who were victims of abuse and high school and university students, among others (Imano & Ogata, 2010; Kobata & Kiya, 2010; Futoyu, Kobayashi, Nagase, & Ikenaga, 2008; Iida, Kumagai, Hosogaya, Kuribayashi & Matsuzawa, 2008; Naitoh, Iwahashi & Ohta, 2005; Kokubo, 2004; Kanamori et al., 2001). Among these studies, AAE and AAA for young children in kindergarten/nursery school, and elementary school, and AAT and AAA for elderly people and children with developmental disorders were the most common areas of focus. Animal participants in these studies included dogs, horses, dolphins, cats, rabbits, farm animals including cows, goats, fish, birds, guinea pigs, and silkworms. Notwithstanding the controversy surrounding the use of dolphins in AAI (Marino & Lilienfeld, 1998, 2007; Brakes & Williamson, 2007), Dolphin-Assisted Therapy (DAT) remained the third most common AAI, after canine and equine therapy.

With respect to the study design, approximately half of the Japanese studies had less than ten participants and no control groups. Many of them were case reports, descriptive studies, and before-after studies that did not employ randomized control measures. Also, more than 20 percent of the

studies that explored the impact of AAI consisted of only a single session, and more than 40 percent of them had less than five sessions. Although the results obtained varied, a majority of the studies reported positive outcomes with AAI. The need for more objective studies in the field of AAI as endorsed by Herzog (2015), holds true for AAI research in Japan. It is also interesting to note that several studies have focused on the efficacy of robot-assisted activities. Studies incorporating dog shaped AIBO and seal shaped PARO have been particularly well documented, with PARO devised as a replacement for therapy animals so as to eliminate the risks of allergy, zoonotic diseases, as also the burden of caring for an animal (Shibata, 2012). The attempt to derive the benefits of AAI by substituting animals with robots is unique to the Japanese context and may relate to the Japanese culture and attitude towards animals.

The Japanese culture, environment, and attitudes towards animals differ from those in the U.S. and European countries (Fujimura & Nommensen, 2017), and the field of AAI in Japan has to develop in its own unique way (e.g., Nakajima, 2017). While a variety of AAI researches and programs are conducted in Japan, there is a definite scarcity of rigorous research providing highly objective analyses of the efficacy of AAI on the Japanese population. A further impediment is the large scale reporting of research evidence in the Japanese language, which limits the scope of its impact, critical analyses and replication at a global level. However, despite existing drawbacks, given the growing research and activities in the field in Japan, it would be safe to foresee a remarkable development of the field in the future.

India

The realm of human-animal relationships in India can be most modestly described as an extremely complex and

continually evolving phenomenon. It has strong roots in India's complex and diverse religious canvas, marked by the powerful influences of six major religions-Hinduism, Christianity, Islam, Sikhism, Buddhism and Jainism, and others such as Zoroastrianism and Judaism. The commonalities and differences within and across these religious systems and its juxtaposition with the economic and social value attached to an animal, have led to multiple and varied attitudes and beliefs towards animals. These include a deep reverence for animals as part of nature, a deification of certain animals species thus providing them unique protection under religious systems and a disparate treatment of different animal species (Krishna, 2014), including certain animals being considered unclean, within different socio-cultural groups. The growing evolution of human-animal relationships in the Indian context also has its roots in the country's rapidly changing social and economic rubric and the fast-growing processes of urbanization and acculturation (India International Pet Trade Fair, n.d). The growing interest in companion animals is partly reflected in the increasing number of pets being adopted (with 600,000 pets being adopted every year on an average), an \$800 million plus pet industry and estimates that project India to be the fastest growing pet market in the world. Reasons projected for the same include growing disposable incomes, delayed parenthood and an increasing interest in and humanization of pets through positive media portrayals of pets and an overall environment of sensitization (Euromonitor International, 2017; India International Pet Trade Fair, n.d.; Khare, 2015).

A number of legislations related to animal protection and welfare are in place in India, the first and the most significant being the Prevention of Cruelty to Animals Act of 1960 enacted by the Indian Parliament, which

also led to the formation of the Animal Welfare Board of India (AWBI) under section 4 of the act. The AWBI is a statutory advisory body functioning under the Ministry of Environment and Forests. It advises the Government of India on animal welfare laws, and grants both recognition and guidance to various animal welfare organizations in India and these include among others several NGOs such as the Blue Cross of India, People for Animals India, the Wildlife Rescue and Rehabilitation Center, Animal Aid-Unlimited and PETA-India. The National Institute of Animal Welfare (NIAW) is another division of the Ministry of Environment and Forests with a primary focus on improving the status of animal welfare in India through research, education, and related extension activities (Ministry of Environment and Forests, Govt.of India, n.d).

While several laws are in place, criticisms have been raised against the relative obsolescence of these laws including the Prevention of Cruelty to Animals Act of 1960, as the punishments and deterrents prescribed (for e.g. monetary punishments or fines) have not been updated to suit current times and hence are rendered ineffective (e.g., Bhushan, 2016; Humane Society International/India, 2014). Taking cognizance of these criticisms and with the joint efforts of animal welfare organizations, the Ministry of Environment, Forest and Climate Change released four new Gazette notifications in 2017, under the Prevention of Cruelty to Animals Act, 1960. These notifications are directed towards regulating dog breeders, animal markets (livestock), and owners of aquarium and pet fish tank shops (PETA, 2017). While this is a positive step, more concerted efforts are required towards updating and fortifying the existing animal protection and welfare laws.

Organizations providing AAI in India

The first AAI program in India started in 1996 and was pioneered by the Blue Cross of India, in collaboration with the Saraswathi Kendra Learning Centre for children with autism, dyslexia, learning disabilities and attention deficit disorders (A.D.D.), in Chennai. In 2001, the Dr. Dog program was introduced in India with the assistance of the Animals Asia Foundation(AAF), with services provided to special schools and old age homes in the Chennai area. An implementation of the Dr. Dog program has also been reported in a few other cities namely Bangalore, Tirupati, Visakhapatnam and Ludhiana (Krishna, 2015) though the practice is extremely scattered.

Two other well-known non-governmental voluntary organizations involved in the practice of AAI in India are the Animal Angels Foundation in Pune and Mumbai, (<http://animalangels.org.in/>) which is a full member organization of the IAHAIO (International Association of Human-Animal Interaction Organizations, n.d.) and another center by the same name (Animal Angels Foundation) (<http://www.animalangelsfoundation.com/>) functioning in Mumbai and Hyderabad. These organizations are headed by therapists certified by the University of North Texas in collaboration with Pet Partners, USA and the services provided include AAA, AAT, and AAE in various contexts, including hospitals, schools and special education institutions as also crisis and disaster response. While canine therapy is most common, other animals incorporated include cats and rabbits. These centers also provide training courses and educational workshops in AAI and related areas. Animal Angels Foundation, Pune partners with the Consortium for Animal Assisted Therapy, University of North Texas in providing training and certification in AAT. Minal Kavishwar, founder of the Animal Angels Foundation, Pune and her therapy dog Kutty

were the first Pet Partners registered therapy dog-handler team from India and won the Delta Society's Beyond Limits Award in 2008. Teams from the same organization were also part of the Green Chimneys conference and the NIH-Waltham workshop, 2015 as also the IAHAIO International Conference, 2013, engaging in active discussions on the changing contexts and attitudes towards animals in India and the challenges faced in the practice of AAT (M. Kavishwar, personal communication, April 21, 2015; Chandler, 2005; <http://animalangels.org.in/>). India's first equine therapy center- Healing Horses started in Bengaluru in the year 2000, led by Pushpa Bopaiah, a PATH International certified equine therapist, and offering services to children with disabilities, particularly autism and ADHD ("Healing with Horses", 2009). Under her guidance, a second equine therapy park offering therapeutic riding benefits was set up in Hyderabad in 2012 ("Equine Therapy Park set up at Golconda", 2012). More recently, the Indian Cancer Society has been using equine therapy to help cancer patients overcome feelings of fear and loss of control that usually accompany a cancer diagnosis (Shelar, 2017).

AAI research in India

Research in AAI is extremely lacking in India and mirrors the limited scope and expanse of AAI practice. A review of existing AAI literature in the Indian context (Valiyamattam, 2015a) and a search via the Medline, Proquest, Scopus, Google Scholar and HABRI Central databases for HAI/AAI research in India, using the keywords "Human-Animal Bond (HAI)", "Animal-Assisted Intervention (AAI)", "Animal-Assisted Therapy (AAT)", "Animal-Assisted Activities (AAA)", "Animal-Assisted Education (AAE)", "Canine assisted therapy", "Equine assisted therapy" "Dolphin assisted

therapy" and "Hippotherapy" revealed two pilot studies (unpublished conference papers) assessing the impact of AAI on children with autism and developmental disabilities (Kavishwar, 2007a; Kavishwar, 2007b). Both studies reported improvements in social functioning and decrease in behavior problems in children with autism who received AAI. Although the existence of some form of research beyond that of anecdotal evidence was found to be encouraging, the research was also found to be enormously lacking in methodological rigor. While the studies incorporated control group evaluations, deficits included small sample sizes, a failure to account for positive expectancy biases, a lack of statistical rigor and an absence of systematic covariate selection and assessment (Valiyamattam, 2015a). In recent years, ongoing research projects though in their extremely embryonic stages have focused on the efficacy of AAI for autism (Valiyamattam, 2015b) and an understanding of the human-animal bond from the Indian psychology perspective (Valiyamattam & Devi, 2016).

While the field of AAI shows promise in the Indian setting, major areas of concern include few certified AAI practitioners, a lack of standardization in terminology and practice, a lack of rigorous documentation of AAI impact, as also a lack of research that focuses on the multiple and diverse cultural considerations involved, with each leading to the other (Valiyamattam, 2015a). Sustained efforts in these areas of concern and the establishment of centers of HAI/AAI research within academia would serve as necessary prerequisites for the growth of the field in India.

China

The rapidly growing pet market in China is evidence of the growing interest in companion animals among the Chinese

population. In the ten years from 1997 to 2007, the number of pets increased by an enormous 500% (Gao & Li,2008). According to a 2013 survey, 150 million pets were registered in China, mainly comprising cats and dogs (Zhu,2015). China's animal protection laws are still in their infancy and the necessary emphasis on animal welfare is lacking (Liu,2012). In 1988 China promulgated the Law of the People's Republic of China on the Protection of Wildlife (The Central People's Government of the People's Republic of China,1988). However, this law is directed only towards the protection of wildlife and associated resources and does not include companion or farm animals under its purview. With regard to companion animals, local regulations exist that focus only on dog management. The regulations established in the 1980s banned rearing, and a revision of these regulations in the 1990s were directed towards limiting rearing(Liu & Hou,2006).

Considering that canine therapy is the most common form of AAI worldwide, a relevant concern would be as to how the Chinese population views dogs. The domestication of dogs in China can be traced back to ancient times with dogs being used for multiple purposes such as being a source of food, as work animals and to a lesser extent as companions. The unfavorable attitude towards dogs through the years, particularly of the Chinese governmental agencies can be attributed to several and contested reasons. These include protecting humans from infected dogs following the alleged bacteriological warfare by the US in Korea, evidence regarding which is inconclusive; the risk of rabies to humans, the potential harm from vicious animals and the possibility of food shortage in a country with a huge population, due to its consumption by animals (Li, 2012; Custer, 2017; Kinmond, 1957). The potential physical harm from dogs and the possibility of food scarcity were also

probable reasons for the negative bias against large dogs, as a bigger dog could be in a conventional sense more dangerous and would also consume more food (Kinmond, 1957). The one-dog policy was introduced in Beijing from 2006 and in Shanghai from 2011 and restricts the number of dogs to one per family with a legal limit for dog height being 14 inches or 35.5cm. Further, restrictions have been placed on abandoning dogs or taking dogs to public areas such as markets or parks. A major driving force behind this policy has been the discovery of rabies as the highest contributor to the mortality index in China ("Beijing Sets a 'One Dog' Policy to Combat Rabies", 2006). Also, this ban is effective in the key areas of the cities and not in the outskirts. The danger posed by larger dogs seems to be the more legitimate reason for banning their domestication, particularly in the cities of Beijing and Shanghai, as the possibility of food shortage is no longer a logical explanation considering the contemporary reality of these cities.

Dog meat is still consumed in modern China, but this again is influenced by both ethnicity and age group. China is a hugely multi ethnic country and while some of these groups are consumers of dog meat, most of the others particularly the younger generation and the middle class are vehemently opposed to it and see dogs as pets and family members. It is also interesting to note that these youths also form most of the activist groups involved in vigorously squashing out this practice and acting for animal protection and against the lack of animal protection laws, in several ways (Custer, 2017; Li, 2012).

While China's cultural legacy and particularly the religious influences of Buddhism and Daoism promote compassion for non-human animals, the history of political reforms especially directed towards alleviating poverty and scarcity, can be

pinned down as a principle reason why animal welfare and animal rights concerns are considered to be at loggerheads with economic development and human welfare in China (Li, 2012). However, the increasingly huge number of animal lovers in China and the permeation of the political system by officials who are sympathetic to animal rights and welfare raises strong hopes of far reaching changes in the general outlook towards animals (Li, 2012).

Animal-assisted interventions have had a comparatively late start in China with very few studies, and few institutions specialized in the study or promotion of HAI/AAI.

AAI programs in China

One of the earliest AAI programs in China is the Dr. Dog Program, founded by the Animals Asia Foundation (AAF). This program was launched in Hong Kong in 1991 and started in 2004 in mainland China. Currently, more than 100 dog doctors provide services on the mainland, visiting hospitals, homes for the elderly, centers for the disabled, orphanages and schools in Hong Kong and three mainland Chinese cities. (<https://www.animalsasia.org/cn/>). A similar program also launched by the Animals Asia Foundation and specializing in AAE is the Professor Paws program and involves registered therapy dogs visiting Chinese schools. Started in Hong Kong in 2004, it also runs in the three mainland Chinese cities. By the end of 2016, dogs from the Dr. Dog program had visited over 12,000 people, and Professor Paws activities had benefited over 24,000 people (<https://www.animalsasia.org/cn/>).

Though controversial, dolphin therapy is also provided to children with autism and involves services provided by the mental hospitals or China Disabled Persons' Federation or autonomous individuals. The

first Chinese dolphin rehabilitation training center- the Shenzhen ocean world dolphin rehabilitation center claimed a curative effect of dolphin therapy on some children ("Shenzhen Dolphins Act as Doctors," 2011). In addition to this, equine assisted therapy for children with autism has been autonomously started by horse ranch owners, with up to three children reported as being rehabilitated within a single year. Since then, equine assisted therapy has attracted increasing attention with horse ranches being newly developed in 2017 for providing the same ("Guy from Nanjing Starts a Horse Ranch," 2016). There are four full member IAHAIO organizations in the China area namely, Companion Animal Research & Information Centre, Hong Kong Institute of Animal Assisted Intervention (HKIAAI), Hong Kong Animal Assisted Therapy Association (HKAATA) and Formosa Animal-Assisted Activity & Therapy Association (International Association of Human-Animal Interaction Organizations, n.d.).

AAI research in China

Apart from the existing AAI programs, the study of AAI in China has been an individual and relatively isolated exercise led by a few researchers. We attempted a broad review of studies in AAI and related areas in China in the Medline, Proquest, Scopus, Google Scholar and Habri Central databases using the keywords Animal-Assisted Intervention (AAI), Animal-Assisted Therapy(AAT), Animal-Assisted Activities (AAA), Animal -Assisted Education (AAE), "Canine assisted therapy", "Equine assisted therapy" "Dolphin assisted therapy" "Hippotherapy", Professor Dog and Dr. Dog in English and Chinese where usable. We also used the Chinese equivalents of these keywords to search two of the largest information repositories and search engines in China (<http://www.cnki.net>) and (

<http://www.baidu.com>). Canine therapy was found to be the most commonly used AAI and the existing studies though extremely few, spanned several population groups. While AAA was found to improve emotional behaviors and social development in children with developmental disabilities (Song & Wang, 2006), AAT showed significant benefits in alleviating depressive mood (Gao, 2012) and social anxiety (Sun, Wang & Wu, 2011) in college students. Benefits of AAT were also documented for patients with psychiatric conditions such as chronic schizophrenia with a combination of drug administration and AAT reported to facilitate illness improvement and ameliorate pathological symptoms (Zhang & Liu, 2013). Research on patient compliance during installation of artificial limbs for orthotics also reported AAT efficacy in relieving patient anxiety, lowering blood pressure and shortening treatment time, thus improving the effects of physiotherapy (Zhang, 2014).

The comparatively slow development of the field of HAI/AAI in China can be attributed to several factors. Cultural attitudes towards animals continue to disapprove of companion animals to a significant extent (Wang, 2012) and there is a continuing fear among the public of the spread of zoonotic diseases despite the gradual standardization of animal management techniques in recent years (Liao, 2016). The limited awareness of the benefits of AAI and a lack of regulation in AAI terminology and practice act as further impediments. This is further compounded by deficits in legal and policy support in the formulation and implementation of AAI programs.

With regard to AAE, while a few kindergarten and primary schools have incorporated animals in the educational process, the existence of the same in middle schools is negligible (Zhang, 2017). The reasons for this are multiple. The concept of

education leading to all-round development as proposed by the Chinese government, still largely remains an abstract concept (Du, 2007). There is also an overbearing pressure on Chinese schools to increase the rate of their students entering a higher school, and activities that do not explicitly contribute to this goal are often ignored (Pang, 2011). This, coupled with the lack of parental awareness of the benefits of AAI and cultural concerns, creates a greater reluctance in accepting AAI as a mode of educational intervention.

However, the dramatic increase in the demand for pets among Chinese residents in recent years cannot be overlooked. Several factors have driven this, such as a high patient population by virtue of China's large population, an aging population, decreasing birthrate due to China's one-child policy, increasing psychological loneliness and several associated social factors (Gao & Li, 2008). This along with a gradual introduction of more flexible education methods in line with the European and North American models (Yang, 2012), offers favorable prospects for the development of AAI as a field of education, research, and practice. However, delivering on these prospects would require creating greater awareness, adopting standardized practice, and devising means to circumvent the barriers created by cultural differences.

A Model for enhancing Multicultural Considerations in AAI: Towards Culturally Sensitive Research, Education, and Practice

The growing expansion of AAI practice to multicultural populations within and outside the US and Europe warrants an even greater emphasis on the cultural considerations and implications involved. Jegatheesan (2015) put forward a culturally responsive framework for AAI that focused on key elements of AAI practice. The

present paper seeks to expand on this framework with the assumption that culturally sensitive practice as espoused by Jegatheesan (2015) is inextricably linked and overlaps with culturally sensitive research and culturally sensitive education. It seeks to augment the existing framework by presenting culturally sensitive research and education as two crucial elements that in addition to culturally sensitive practice comprise key areas of focus in lending AAI a stronger empirical foundation within a multicultural context.

Culturally responsive AAI Research

While a substantial amount of literature has emphasized the importance of the incorporation of cultural variables in health research, few studies have focused on providing concrete frameworks for how this can be achieved. A widely cited framework for encouraging culturally sensitive research has been provided by Rogler (1989) in the field of mental health, and this framework also evidences capacity of being expanded beyond the mental health arena. Rogler views cultural sensitivity as a continuing process of inquiry and adaptation that pervades the entire process of research. He proposes three broad requirements in the process, namely a direct immersion in the culture being studied, adaptations to the cultural context in the collection of field data and an appreciation of cultural considerations in the analysis of the data obtained (thus roughly covering the three major phases of research: preparation, collection of data and the analysis of data) (Rogler, 1989). An analysis of the possibilities for culturally sensitive AAI research within this framework would broadly involve the following key elements:

- (a) Cultural immersion in AAI research through-
 - The development of a body of cultural data containing effective

pointers for cross-cultural research, through continued qualitative and quantitative explorations of the cultural dimensions of human-animal interactions.

- Direct immersion in the cultural correlates of the sample being studied, so as to predict cultural ramifications and permit cultural modifications if required.
- (b) Development of standardized HAI/AAI measures that are culturally adapted.
- (c) Inclusion of cultural demographics in the formulation of research questions and the analysis of research data.

Cultural Immersion in AAI research: Significant research exists on the differential roles and conceptualizations of animals in people’s lives across cultures as determined by religious and other socio-economic and cultural histories, and its manifestations in the here and now, continually modulated by acculturation processes (e.g., Fujimura & Nommensen, 2017; Jegatheesan, 2015; Szucs et al. 2012; Serpell, 2004; Herzog & Burghardt, 1988). While these studies unravel several key aspects of the cultural experience, they would also require to be further supplemented in breadth and depth, by an exploration of human-animal interactions at various levels, it's numerous and competing cultural underpinnings in cultures and subcultures within and across communities and the etic and emic in these experiences. Such qualitative in-depth explorations and collations of existing data would further serve to highlight myriad and even contradictory discourses within units that were hitherto considered culturally similar due to geographical proximity or ethnic/religious commonalities.

While qualitative approaches adapt well to a culturally sensitive collection of data and provide rich and detailed

information, the capacity of quantitative approaches in providing culturally relevant information cannot be discounted. Several research studies both within and outside the US have through the years focused on broad areas of attitudes towards animals in general and companion animals in particular, with variables of interest including attachment, empathy, companionship and social support, expectations from animal companions, and factors influencing the conceptualization of companion animals, among others (e.g., Apostol, Rebeca & Micela, 2013; Taylor & Signal, 2009; Prokop & Tunnicliffe, 2009; Signal & Taylor, 2007; Al-Fayez, Awadalla, Templer & Arikawa, 2003; Stambach & Turner, 1999). Many of these studies have employed existing standardized scales such as the Lexington Attachment to Pets Scale (LAPS) (Johnson, Garrity & Stallones, 1992), Animal Attitude Scale (AAS) (Herzog, Betchart, and Pittman, 1991) and others (Anderson, 2007) or developed standardized scales for measuring these phenomena (e.g., Taylor & Signal, 2009). While only a few of these studies have had an explicit focus on cultural variables and cross-cultural comparisons (e.g., Schoenfeld-Tacher, Kogan & Wright, 2010), studies with such an explicit focus and using standardized measures can act as potent source points for culture-specific information on human-animal interactions. Another example of such a source point is treatment acceptability research in AAI. For instance, Rabbitt, Kazdin & Hong, looked at the acceptability of AAT as a potential treatment option for childhood developmental disorders (Rabbitt, Kazdin & Hong, 2014). The modulation of such a study to allow an addition of cultural variables can provide significant information on the multi-cultural acceptability of AAI as a treatment modality and also of changes in such perceptions over time.

Examples from existing research, both qualitative and quantitative, on the multicultural elements of human-animal interactions, may best inform new research studies on diverse populations. However, a culturally responsive research framework for AAI would also invariably require a pretesting period of analysis of the cultural conceptualizations of animals, that is specific to the sample being studied in the present time, to allow for necessary alterations in design.

Cultural reworkings in research that rely on such multiple sources of cultural data, can serve to emphasize important paradigms. These include, an understanding of the multiplicity of cultural discourses that exist and the necessity of looking not only at, but also within more mainstream conceptualizations of culture (as defined by popularly visible markers such as ethnicity or religion); a greater appreciation of the fluidity of culture and the process of acculturation; a caution against stereotyping, broad cultural assumptions and even an overemphasis on cultural elements; and an insight into the universals in the human-animal bond beyond narrow (and sometimes unconscious) normative frameworks of what the human-animal bond should comprise.

Cultural Adaptation of Measures in AAI research: As Rogler (1989) suggests and as is evident in multiple researches involving the use of standardized instruments for measuring psychological and other health phenomena, a culturally responsive research framework that seeks to obtain reliable and valid data would require these measures to be culturally adapted (including, but not limited to linguistic translations) in addition to being psychometrically sound. While a few studies in HAI/AAI (e.g., Apostol, Rebeca & Micela, 2013) have attempted this, for many others an explanation of why such an adaptation was not considered (whether in terms of feasibility or necessity) is largely absent.

Hence a requirement for culturally responsive AAI research would be the development of measures of human-animal interaction and AAI efficacy that are culturally integrated. Such a cultural integration of measures may need to take place at different levels depending on the specifics of the population and the aspects of human-animal interaction being measured¹.

Cultural Demographics in AAI research: The third aspect of the Roglerian model of cultural sensitivity involves the consideration of cultural demographics in the analysis of research data (Rogler, 1989). This aspect holds importance since, despite repeated recognitions of the magnitude of culture as a factor modulating AAI, the impact of cultural variables has scarcely found a place among the principle research questions directing AAI research or as significant covariates modulating AAI efficacy. Another area of focus for a culturally sensitive model of AAI research would, therefore, be the incorporation of cultural variables both in the framing of research questions and subsequently in the analysis of research data, which would also demand as a prerequisite, the incorporation of more culturally diverse samples. Also, while ethnicity, religion or geographical location can act as primary visible points of demarcating between cultural groups, a precise understanding of cultural ramifications would also require the incorporation of cultural sub-factors

operating within these primary domains (social factors and personal variables) as variables of interest/control in data analysis, to an extent possible². A starting point in the consideration of cultural demographics in research could be for instance inter-regional collaborative research efforts that permit the collection and analysis of data in meta-research methodologies beyond linguistic barriers. Most systematic and meta analytic studies of existing research in AAI have focused solely on studies published in the English language. Hence such an exercise can have important implications for non-English speaking regions, particularly where HAI/AAI research and practice are newly emerging.

Culturally responsive AAI Education

A positive factor to be noted is that current educational programs in AAI recognize cultural sensitivity as an area of importance in AAI practice³. However, AAI education that seeks to foster culturally responsive AAI research and practice would require more than a brief allusion to the necessity of considering cultural concerns and the need for developing skills that permit this. It would entail formal training that focuses on systems and approaches of incorporating cultural appreciation in AAI research and practice. Exemplars of such formalized training would ideally involve

¹A cultural adaptation of measures in the context of AAI/HAI research may be required at various levels of measurement. For instance, while measuring treatment acceptability for AAT among parents, Rabbit, Kazdin, & Hong, (2014) use vignettes explaining treatment options (including AAT-canine therapy) for childhood disruptive disorder, as a crucial element in the assessment process. Use of a similar methodology for assessing AAT acceptability in multi-cultural populations may require a culturally appropriate reframing of the vignettes, reconsidering for instance the species of the therapy animal involved.

²An instance of a focus on cultural sub-factors, is the review by Herzog (2007) of gender differences in several areas of human-animal interaction across countries, wherein gender may be considered a cultural-sub factor operating within the primary domain of geographical location.

³An example of this is the certificate course in Animal-assisted therapy provided by the University of North Texas in association with Pet Partners, wherein multicultural concerns in AAT is an area of focus in the course content. Another example is an introduction to AAT provided to students by the Counseling Department, University of Idaho, which among other course content looks at the multicultural considerations relevant to AAT.

access to a repository of literature⁴ on the multicultural aspects of human-animal interactions and AAI, an opportunity for a critical analysis of research findings to delineate best practices in cultural receptiveness, and training in basic skill development for accomplishing more culturally responsive AAI research and practice.

Culturally responsive AAI practice

In the area of AAI practice, Jegatheesan (2015) puts forward a highly workable model that focuses on three elements-belief, knowledge, and skills. The belief component involves a process of cultural self-awareness involving an honest and systematic examination of one's own cultural knowledge, assumptions, and thought processes. The knowledge component emphasizes on acquainting oneself with the client's socio-cultural background in a one-to-one process of discovery rather than relying on broad categorizations that can lead to stereotyping. The skills component focuses on the development of skills necessary to put into practice culturally sensitive AAI based on the knowledge derived. Some of the basic skills that could aid a sensitive practice of AAI would include being able to respectfully elicit precise and relevant information from the client, critically examine the information obtained and formulate an AAI plan that is relevant and ethically sound. This may require skills in intercultural communication, interviewing, problem-solving and collaboration- all of which can be acquired through formal training (Jegatheesan, 2015). Also, essential in the context of culturally

sensitive practice would be research that focuses on the assessment of cultural competence as demonstrated by the AAI practitioner. Research that analyses the practitioner's cultural self-efficacy, problems faced by the practitioner in providing AAI to multi-cultural clients and client feedback on the practitioner's cultural engagement can be extremely critical to ensuring and informing culturally sensitive practice.

Conclusion

Within the realm of an increasing emphasis on appreciating cultural factors in AAI, it is important to understand that culture is fluid in essence and a study of diversity does not involve "the sealing of lives into separate railway carriages,"(Geertz, 2000; p.78). Anybody of cultural research and education, therefore, can only provide best paradigms for a further exploration of cultural phenomena, rather than a set of manuals for reliably decoding culture. Established centers of HAI particularly in the US can have a key role to play in the advancement of cultural considerations in HAI/AAI. Curriculum initiatives on the Human-Animal Bond (HAB) began in the late 1970s and early 1980s in the US and according to a review by Beck and Martin in 2008, North America had 17 centers addressing HAB and related issues. HAB curriculum offerings were predominantly part of the veterinary school curricula, with 14 of the 17 centers located at veterinary institutions (Rowan,2008; Beck & Martin,2008). While more centers of HAB within and outside veterinary institutions are needed in the US, the existing centers by privilege of being established centers, are best positioned to lead cross-cultural

⁴The HABRI Central hosted by the Center of the Human-Animal Bond at Purdue University (<https://habricentral.org/>) serves as pioneering example of an expansive, one of its kind repository of HAI literature providing international access to both contributors and

researchers seeking HAI resources, through an open online platform. Collecting, collating, and disseminating multicultural literature in HAI within such existing repositories and developing newer ones if necessary on similar lines can be an effective mechanism for enhancing cultural sensitivity in HAI/AAI education and research.

collaborations and resource integration at multiple levels in the research, education, and practice of AAI. Such collaborations along with specific funding earmarked for encouraging multicultural practice and research can pave the way for an expansion of AAI into diverse cultural settings particularly outside the US and Europe while maintaining a unified code of terminology, standards of practice and ethics-an area of significant challenge for newly emerging AAI practices. Such an expansion would, in turn, be a primary facilitator paving the way for a growth in the practice of AAI on multicultural populations, which would subsequently provide research data.

Partnerships between centers of HAI/AAI within and outside the US can thus better facilitate cross-cultural comparative research and an assimilation of linguistically diverse AAI literature, yielding rich data that is equally informative to all involved, without holding any group as representing the mainstream or normative standard.

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