



Paths shared between people (*Homo sapiens sapiens*) and dogs (*Canis familiaris*): from aid therapy partners to friends and family members

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ABSTRACT. Dogs (*Canis familiaris*) were the first domesticated species and today, they still have a central role in our societies. Integrated in the post-humanistic approach, we aimed to understand the evolution of the different social roles assumed by dogs, specifically, aid therapy dogs (ATD) that warn human diabetics of the changes that occur in their blood glycemia. Our main objective was to see if at some point in these shared paths, ATD would start being seen in a different way by their tutors and families. Specifically, we looked for: i) Exploring according to the perceptions of the tutors and family members (FM) how an ATD can improve the wellbeing and quality of life of diabetics (both dogs, and humans with diabetes were part of a medical association named Associação Pata d'Açúcar – Medical Dogs for Diabetics (from now onwards Pata d'Açúcar) on which dogs are trained to be ATD to latter be attributed to patients with diabetics and ii) To understand how ATD may occupy different roles throughout the time: from ATD to companion animals (CA) or even family members (FM). Our methodological approach was a qualitative one, centred in observation and semi-structures interviews applied to patients from Pata d'Açúcar. All Humans that accepted to be part for this study were interviewed and observed in different phases of shared coexistence with ATD's: those who lived with an ATD for more than 5 years, more than 2 years and finally, just for a few months. Our sample was probabilistic and stratified. The main conclusion of our study is that for most of the interviewees, ATD's started to being CA and simultaneously FM. Furthermore, ATD's did also work as true ice-breakers in the case of children with difficulties in socializing with peers, facilitating the interactions between individuals of the same or similar age groups.

Keywords: nonhuman & human animals; bonds; entanglements, types of nonhuman animals; evolution of bonds.

Caminhos partilhados entre pessoas (*Homo sapiens sapiens*) e cães (*Canis familiaris*): desde parceiros de terapia de ajuda a amigos e familiares

RESUMO. Os cães (*Canis familiaris*) foram a primeira espécie domesticada e, atualmente, continuam a ter um papel central nas nossas sociedades. Integrados na abordagem pós-humanista, pretendemos compreender a evolução dos diferentes papéis sociais assumidos pelos cães, nomeadamente, os cães de ajuda terapêutica (CAT) que alertam os humanos diabéticos para as alterações que ocorrem na sua glicemia. O nosso principal objetivo era perceber se, em algum momento destes percursos partilhados, os CAT começariam a ser vistos de uma forma diferente pelos seus tutores e famílias. Especificamente, procurámos: i) Explorar, de acordo com as percepções dos tutores e familiares (FM), de que forma um CAT pode melhorar o bem-estar e a qualidade de vida dos diabéticos (tanto os cães, como os humanos com diabetes faziam parte de uma associação médica denominada Associação Pata d'Açúcar - Medical Dogs for Diabetics (doravante Pata d'Açúcar) em que os cães são treinados para serem CAT para depois serem atribuídos a doentes com diabetes e ii) Compreender como os CAT's podem ocupar diferentes papéis ao longo do tempo: de CAT para animais de companhia (AC) ou mesmo familiares (F). A nossa abordagem metodológica foi qualitativa, centrada na observação e em entrevistas semiestruturadas aplicadas a pacientes de Pata d'Açúcar. Todos os humanos que aceitaram fazer parte deste estudo foram entrevistados e observados em diferentes fases da convivência partilhada com os CAT's: os que viviam com um CAT há mais de 5 anos, há mais de 2 anos e, finalmente, apenas durante alguns meses. A nossa amostra foi probabilística e estratificada. A principal conclusão do nosso estudo é que, para a maioria dos entrevistados, as CAT's passaram a ser AC e simultaneamente FM. Para além disso, as CAT's funcionaram também como verdadeiros quebra-gelos no caso das crianças com dificuldades de socialização com os pares, facilitando as interações entre indivíduos da mesma faixa etária ou de faixas etárias semelhantes.

Palavras-chave: animais não-humanos e humanos; laços; emaranhados, tipos de animais não-humanos; evolução dos laços.

Introduction

There are anthropological and archaeological evidences throughout human history that show the existence of interspecies relationships between humans and non-humans without the latter being used specifically for work, indicating the existence of companion animals [CA (Pennisi, 2002; Vigne, Guilaine, Debue, Haye, & Gérard, 2004)], Serpell (2015) refers that in excavations carried out in Jordan in 2010, amongst the hominids remains found back at least 17 million years there were also found foxes, indicating that they had been buried together: “[...] burial practices provide circumstantial evidence of ancient human-animal social attachments [...]” (Serpell, 2015, p. 17), which may indicate that relationships between humans and other animals even involved some kind of affiliative bonds between both members of the dyad. In a similar context, remains of dogs/wolves have been found in Europe (Palaeolithic). These were domesticated and buried together with humans, which is evidence that humans and other animals had relationships for thousands of years, and these relationships were timeless realities. Thus, not only these are presences of other animals’ part of human history, but there is also evidence that CAs are not just a reality of the contemporary world (Serpell, 1996): they have been present since the dawn of humanity. Also, as mentioned by Serpell (1989) the connection between humans and other animals was already visible in several ancient civilizations: amongst the ancient Egyptians, Greeks and Romans CA such as dogs and cats were also popular being for example a symbol of status in the Imperial households of China or Japan. The same was observed in the European elite with different animals brought from stolen lands, during the colonizing process. The role of these animals was aesthetic and they were also a symbol of status.

Serpell (1989) still mentions the existence of animals more commonly applied to whose strength was common, for example, the use of cattle for ploughing agricultural crops, horses for pulling carts, cows for milk and wool for shearing sheep.

Companion animals are important: in Portugal, as in other European countries, their presence in homes has been growing, with more than 7 million specimens in 2018 (Dapra & Casanova, 2020; Casanova & Cortés, 2022).

The branch of cultural anthropology that studies the interactions between humans and other animals (including CAs) started to be named as multi-species ethnography (Kirsey, & Helmreich, 2010), Human-Animal Studies/HAS (DeMello, 2010, 2012) and now it is commonly named multi-species anthropology (Casanova & Vera, 2022): an anthropology that goes beyond the human and in this study falls specifically into the importance of the role played by dogs, more specifically in the so-called ‘western societies’ to use Descola and Palsson’s expression (1996). We will frame our article within the post-humanist paradigm that considers humans as a continuation of all other species, something proved by evolutionary biology many decades ago (Ridley, 2004) but still ignored by the majority of social sciences. The previous paradigm (human exceptionalism) looked at ‘nature’ and ‘culture’ as if they were two separate worlds that did not interact (Casanova, 2016; Dapra & Casanova, 2020; Casanova & Vera, 2022). It was an artificial construction of the so-called Western societies but anthropology has also shown that this vision does not extend to all cultures (Descola & Palsson, 1996; DeMello, 2010; Kirsey & Helmreich, 2010). Anthropologists such as Descola and Palsson (1996) say that human exceptionalism had its origins in naturalism, which gained strength especially in the Renaissance. Much later, the technological, scientific and industrial advances that followed World War II gave strength to this paradigm and anthropology itself was being strongly based on the already mentioned artificial ‘nature-culture’ division, part for an ethnocentric and anthropocentric paradigm), which soon started to fell apart with the numerous ecological problems that began to emerge in the USA and Europe, especially in Germany.

The presence and importance of non-human animals in the life’s of humans are very visible (Shir-Vertesh, 2012; Haraway, 2013; Serpell, 1996) still today. Dogs still take on different roles, not just as CA and/or FM, but as assistants in human tasks, such as working dogs: in pastures guarding herds (or water dogs that helped with fishing), in police kennel teams as sniffers of illegal substances, as lifeguards, guide dogs, rescue dogs in fire and civil protection teams, amongst many others. Finally, it is worth highlighting the dog as a therapy aid. In the health area, it’s important to mention how a dog excels in several therapeutic areas, from helping children with cognitive problems to socialization or by help solving problems between peers (dogs help in socialization processes), to therapy dogs that help to detect various types of cancer or low blood glucose levels (type I diabetics - see for example Rooney, Morant, and Guest, 2013), in the treatment of anxiety and

depression (Serpell, 1989; Haraway, 2013; Vasconcelos et al, 2021). Among the therapies that are helped by dogs, we should also mention children with autism, whose difficulty in relating to peers and adults can be overcome with the help of this faithful companion (Serpell, 1989; Haraway, 2013). The social importance of this species is also visible in different areas of society, from the rehabilitation of prisoners, from making extraordinary differences for homeless people (Irvine, 2003), to the companionship that they provide to elderly people with no close family (Casanova & Cortés, 2022).

The dog, and other nonhumans, are also seen as an agent and not a mere spectator of humanity (Haraway, 2013). Humanity cannot be defined without including other animals and vice versa, as all living beings that are part of the same ecosystems that are shared by all species (Haraway, 2013).

Today, the presence of dogs goes beyond therapy, not just in the area of health itself, but also in the areas of interpersonal relationships that are characterized by reflexivity and subjectivity, occupying a central role in many multi-species families (Casanova & Cortés, 2022). Dogs have thus taken on a prominent role in our society, also as a FM: many people equate their CA with members of their own family as if there was some kind of kinship (Shir-Vertesh, 2012; Haraway, 2013; Dapra & Casanova 2020) and whose role in their lives is almost like that of a human. This research areas are exploring the human-non-human relationships and crossing boundaries that would have been unthinkable decades ago (Casanova & Cortés, 2022): 20 or 30 years ago, we could see that many CA's guardians didn't think of them as FM (Haraway, 2013). For example, in the case of some dogs, their main purpose was mainly to guard property or be used for hunting. It was more common for dogs to live outside the family home, not necessarily living with humans inside their homes. Nowadays, we see more and more people adopting CAs without them having a practical work function, but rather in the quest to build an intimate relationship. Now many live in our homes and even occupy our most intimate spaces: our own beds (DeMello, 2010; Haraway, 2013).

Today there are even guardians who adapt their own diet to the needs of the CAs with whom they share their lives with (Haraway 2013; Dapra & Casanova 2020). Visits to the vet are also a frequent routine, in addition to the food bought, which is often expensive when it comes to special foods formulated for certain health problems, such as foods that are specifically developed to help with problems with the intestinal tract, hypoallergenic or, as is more common in cats, to help with kidney function, and are not limited to the 'leftovers' of human meals as they were a few decades ago (Serpell, 1996).

Nowadays, the development of the CA industry is thriving, as it not only covers food and medication, but also toys and even clothes, grooming and bathing establishments, and even cremation services. The growing importance of CAs in the lives of humans who even make changes to their own lives to adapt to the presence of another FM are obvious (Haraway, 2013; Casanova & Cortés, 2022). Even in the case of non-humans used as therapy aids - which are a practice where non-humans are an integral and main part of a treatment (ATD), with the aim of promoting the well-being and social, cognitive and even physical improvement of human patients - we start from the knowledge about the relationships that are established between humans and non-humans: emotional ties that imply strong affiliative bonds and friendships between both also promote health and bring benefits to the quality of life of both: humans and non-humans (Capote & Costa, 2011). Dogs live with these human patients on a daily basis. Specifically, it is important to investigate how the close relationship between an ATD and a human being is built, how this relationship evolves - if at all - into a relationship marked by lasting bonds of friendship (or even FM). As Shapiro (2020, p. 801) points out,

Relationships occupy a space between two entities. While anchored in and co-constituted by two distinct entities which it, in turn, modifies, a relationship is a distinct phenomenon [...]. While a full description of any two entities can furnish the limits and potential forms of their relationship, it is not yet a description of that relationship.

Human-other animal relationships tend to be relationships where the benefit derived from them, is mostly on an emotional level (Serpell, 1989). In multi-species anthropology, other animals have come to be seen as agents in their own right, as sentient beings, having crossed the border of the last 'others' in anthropology (Casanova, 2016). In fact, in this new post-humanistic paradigm, there are more avant-garde authors such as Herman (2018, apud Casanova & Cortés 2022) who go so far as to say that it is irrelevant that this interaction among humans and non-humans means the same for both species, because the driving force for current post-humanist thinking about the interconnectedness between all animals (humans included) is the shift from rational thinking to accepting perception and bodily experience as a valid starting point for the production of knowledge (Casanova & Cortés 2022). Human measurement is no longer an accepted standard for verifying the state of mind of a non-human (Herman, 2018 apud Casanova & Cortés, 2022). The ideology that the human

being is the centre can be deconstructed, and the ability to make an anthropology 'beyond' the human has emerged, by breaking with the thought that the human being is unique and a being whose presence on earth and in its ecosystems is indispensable. Humans, whose anthropocentric thinking guides and judges the other animals on their ability to have feelings are thus broken (human exceptionalism). This is why Descola (2014), quoted by Kopnina (2017, p. 268), refers to the importance of

[...] repopulating the social sciences with nonhuman beings, and thus of shifting the focus away from the internal analysis of social conventions and institutions and toward the interactions of humans with (and between) animals, plants, physical processes, artefacts, images, and other forms of 'beings', since humans are also animals.

In other words, human beings are animals in their genesis, shaped not only by their own culture and community, they are not animals that are completely detached from the way in which other animals, wrongly dubbed 'non-rational', exist, alter and shape the ecosystems in which humans also live. Considering the treatment and analysis of the animal perspective of the relationship, giving them a 'voice' (Descola, 2014) as a social agent and not just consider our perspective as human beings it is what is argued by Shapiro (2020). It is crucial to understand the dynamics of the interrelationships of anthropology that is not just confined to humans but it concerned with the effects of our entanglements with other kinds of living selves (Kirsey & Helmreich, 2010). There is also a growing need to breakdown disciplinary barriers that exist between humans and non-humans. These relationships are seen as only being able to be formed between sentient entities that are aware of this relationship, where concise, lasting and intentional bonds of friendship are formed from one side to the other, and where non-humans also participate, capable of forming bonds, making non-selfish friendships with entities of another species, among many other features. It is here that the ideology that human beings are the centre and can be deconstructed, and the ability to make an anthropology 'beyond' the human emerges, by breaking with the thought that human beings are unique and a being whose presence on earth and in its ecosystems is indispensable. Human beings are animals in their genesis, shaped not only by their own culture and community and like non-humans, they exist and alter and shape the ecosystems in which humans also live.

Before concluding this brief theoretical framework, it is important to address the definition of a companion animal (CA) and to point out that we have chosen this concept because – but not only – it is most commonly used in academia (see Serpell, 2015) instead of 'pet', since it seeks to portray, in the vast majority of cases, a relationship between companions/friends where there are intimate and profound interactions and feelings that are exchanged between the two: humans and non-humans (Haraway, 2013; Serpell, 2015). Serpell (2015) refers that the CA is characterized by the fact that it is integrated into a large population of domestic animals, whose practical use in work is not applicable, and are characterized by the fact that they are mainly domestic animals with whom the guardians develop a relationship of friendship (which often goes beyond these conditions) and comes to include non-humans in a category of kinship like other family members (Haraway, 2013; Serpell, 2015). As previously mentioned, the presence of an ATD can go far beyond therapy, not just in the area of health itself, but also in the areas of interpersonal relationships that are characterized by reflexivity and subjectivity, occupying a central role in many multi-species families (Casanova & Cortés, 2022), many times being CA, or as FM since people equate their role with members of their own family (Serpell, 1989, 1996, 2015; DeMello, 2010, 2012). Thus, the term CA has replaced the term 'pet', since in social terms, friendship is an element that characterizes these relationships: friends are valued first and foremost for the emotional and psychological support they give each other as opposed to merely material assistance (Serpell, 1989). Friendship is a term applied to certain types of positive, intimate and relatively long-lasting relationships (Serpell, 1989). Human beings are closely linked to other animals through bonds of affection that are nurtured mutually. These non-humans, almost humanized by us, go from CA to FM, thus seeing their social role transformed (DeMello, 2010, 2012; Serpell, 2015). We celebrate their lives, mourn their deaths and dedicate part of our lives to the well-being of living beings who share our home, our bed and our lives (DeMello, 2010, 2012).

In turn, the choice of the concept of 'guardian' was also deliberately chosen because it does not imply an 'ownership relationship' and non-humans are not seen as a commodity or a product (Haraway, 2013; Serpell, 2015).

With regard to animal-assisted therapies (AAT) in particular, and exploring the etymology of the concept itself, Da Costa and co-authors (2017, p. 2) state that,

Animal-assisted therapy is a therapeutic resource in which the human-animal relationship is used to promote people's physical, social and emotional health and cognitive functions. This activity is based on the use of therapy dogs, which must be in good physical and mental health in order to come into contact with patients (Da Costa et al., 2017, p. 2).

As Rooney et al. (2013, *grifo nosso*) point out, using the principles of associative learning, dogs can be rewarded for showing 'alerting' behaviours when their owner's blood sugar levels fall outside a specifically agreed target range. However, there aren't many reports or works that support the work done by Type 1 Diabetes (T1D) alert dogs, especially in Portugal, an area that is often overshadowed and neglected by other therapeutic branches, due either to a lack of public information, as many people are unaware that T1D alert dogs exist, or the very lack of belief that these helpers do any practical work for their guardians, since diabetes is not a visible problem or is considered a physical disability (at least compared to the case of guide dogs for the blind, where we can actually see the work done by their guides). Nowadays there are trained dogs (especially from the point of view of smell) to detect prostate cancer at an early stage (Cornu, Cancel-Tassin, Ondet, Girardet, & Cussenot, 2011), ovarian cancer (Horvath, Andersoon, & Nemes, 2013) or in other organs such as the bladder (Willis et al, 2004) or for example the lungs (Fischer-Tenhagen, Johnen, Nehls, & Becker, 2018) among many other organs. Although some argue that ATD's are not available 24 hours a day, the truth is that there are many reports of owners waking up to their dogs in the middle of the night in times of hypoglycaemia and assertively managing to avoid serious decompensation (Kruger & Serpell, 2006).

Progressively, as Kruger and Serpell (2006, p. 21) pointed out, this mistrust has been broken down, and more and more academics are looking into this issue: "Despite their long history and the unequivocally positive media attention they typically receive, animal-assisted interventions are currently best described as a category of promising complementary practices that are still struggling to demonstrate their efficacy and validity". This resistance may also be related to the old paradigm of human exceptionalism, which doesn't want to leave the survival of a human in the 'hands of a non-human'.

This work aims to characterize the development of relationships between humans and dogs, more specifically: with dogs that are, first and foremost, therapy aids in the detection of low glucose levels in diabetic patients. It is part of an academic empirical study conducted at the University of Lisbon and was never published. This work was authorized by the scientific board of the University of Lisbon (ISCSP).

Our general objectives were to understand the different social roles assumed by the dogs. Nevertheless, we had specific goals too:

i) Explore how Animal Therapy Dogs (ATDs) can improve the quality of life of diabetic patients type I (according to the perception of the interviewed), who are registered with Pata d'Açúcar (an institution that trains ATDs in Setúbal District, Portugal, and later gives them to diabetic patients) and

ii) To understand how the dog can play different social roles over the time in the lives of human suffering from diabetes: from therapists, to friends, to CAs or even FMs. Basically, we wanted to understand whether or not the way in which a dog is perceived by its guardians' changes over time.

Pata d'Açúcar was founded in 2017 as a non-profit organization. This association originated from a similar model in the USA and Canada, which rescues, rehabilitates and trains ATDs to accompany people with diabetes.

The dogs are trained to detect medically negative blood glucose levels in order to immediately warn people with diabetes that they need to take insulin quickly. After training the dogs, the association itself assigns them to people with type I diabetes according to their personality traits and the demands of their daily lives.

All the ATDs are rescued from kennels and rehabilitated by the association, which at the end of each year goes to shelters for abandoned animals. To do this, the Training Department and the Veterinary Department apply a set of 12 specific tests to the canine community, considering specific parameters of character, focus and motivation, as well as their health condition, and only those with 100% excellence results are observed and considered.

It is important to note that the work of this association is not only to train ATDs but also to rescue dogs abandoned in kennels, giving them a second chance as ATDs and where their animal welfare is just as demanding as that of their counterparts in Canada and the USA.

Once the complementary health diagnostic tests have been carried out, with the approval of the Veterinary Department, the selected dogs are rescued and registered for all the members who collaborate in the project. Considering animal welfare, the work of acclimatization and socialization, gradually starts and culminates the process of olfactory detection training, in which the ATD are exposed to the presence of people with type I diabetes, so that they gradually make the transition to being able to mark independently. All this training will last approximately 8 months, but it will have to continue throughout the non-animals lives together with their guardians.

Once the basic training has been completed, applications will be invited from members, who will then be able to benefit from the help of therapy dogs to detect low blood glucose levels. The ATD's also gain a new

lease of life, some of whom, despite their 'sweetness', have gone through difficult periods marked by hunger and mistreatment.

People receive the ATD that best suits their needs and personality traits. The people interviewed for this study were selected according to the length of time they had been living with an ATD, which ranged from 4 months to a maximum of 5 years of daily cohabitation.

As previously mentioned, the method chosen for this work was qualitative and various techniques were used. Central to any research work is bibliographical research (Bernard, 2006; Kabir, 2016). This research consists of reading and analysing elements that range from internal documents about the institution to reading academic papers on this issue. The main technique chosen in this study was the semi-structured interview (Bernard, 2006) and, whenever possible, this was complemented with observation. Unfortunately, it wasn't always possible to conduct face-to-face interviews and some of these were conducted via zoom for different reasons:

i) because some interviewees - perhaps due to the pandemic situation (when this study was conducted) - showed some fear of establishing direct contact due to their medical weakness (diabetes) and clearly stated that they did not feel comfortable with face-to-face interviews, even with a mask. As researcher, obviously the first author accompanied by the last author and respected their decision;

ii) because some interviewees were in very remote areas (e.g. Minho or areas equally distant from the greater Lisbon area where we were), making it financially impossible for our team to travel to these places. But whenever possible, all the interviews were conducted in person in open spaces such as parks, gardens or the interviewees' workplaces with open spaces.

It is also important to note that all the concerns of the interviewees and the association were respected and all respondents filled in a Consent Declaration, previously approved by the organization (and the faculty).

All the interviews were carried out with different people registered at the institution in question who had already been assigned to ATD's and who were currently at 3 different stages of contact: from those who had been assigned an ATD for more than 4 or 5 years (the association was only formed in 2017), to those who had been assigned an ATD for 3 years, for example, and to those who had only been assigned an ATD for 5 months.

From these strata (organized according to the amount of time guardians had been in contact with the ATD's), 2 individuals were randomly selected from each of the strata.

By forming 3 different strata (depending on the length of the link between the ATD and the guardian) and randomly selecting the respondents who fit into each strata, the interviewees represented more than 20% of those registered with Pata d'Açúcar so with this percentage and a random sample, our conclusions can be generalized to all the members of the association (although this was not initially our concern). Such extrapolation means that the conclusions of this study are valid to all Pata d'Açúcar's members.

The co-operation and collaborative work with Pata d'Açúcar were excellent and we are eternally grateful for the opportunity they gave us to enter a world they don't usually share with the general public. They allowed us to enter an unknown world where deep and lasting bonds are developed between humans and non-humans that start out as, above all, therapeutic bonds but which later, little by little (sometimes quicker) went beyond that meaning and went far beyond therapy. As previously mentioned (Bernard, 2006), although initially the aim was not to do a 'representative' study of the diabetic tutors who are accompanied by Pata d'Açúcar, the way in which the respondents were selected ($n=18/n=6$: more than 20% and randomly selected) made this possible, as we interviewed more than 20% of the registered respondents and randomly selected 2 from each stratum, making a total of $n=6$ (Bernard, 2006).

The semi-structured interviews were based on a script that sought to collect answer regarding the specific objectives described in the introduction of his paper.

As for the ethical standards of this work, it was controlled by the scientific board of ISCSP for a final academic work, but was also controlled by Pata D'Açúcar. First of all, the institution contacted all its members to find out who was willing to take part in the study. When they did, it distributed a short summary of the objectives of our study. According to the association's legal office, all the association members responded positively to our appeal. This appeal was accompanied by already mentioned Consent Declaration in which, in addition to explaining the aims of the study, it was also stated that respondents could withdraw from the study at any point. In addition, the anonymity and confidentiality of the ATD collected was guaranteed, ensuring that the names of guardians and ATD were replaced by false names, and that any episodes that could in any way help to identify the dyad (guardians-ATD) were eliminated. We also asked for permission to record the interviews so as not to lose any information. At the beginning of each interview, the respondent was explicitly asked if they accepted the recording of the interview.

Whenever possible, the relationship between the ATD and the guardian was also observed in order to assess the dynamics of the relationships during the interviews. Still with regard to our research objectives, we can illustrate their validity through small excerpts or short transcripts of parts of the interviews that helped us understand whether or not the objectives we initially considered were met. The contents of the interviews are not totally included in our present results due to their length, so other results will be published in an article to be submitted later also about ATD.

In general, all guardians confirm that sharing their life with ATD has brought them greater security and quality of life. But they also mentioned that they change their routines in order to adapt to the ATD as well, such as more regular and hygienic walks which become part of their daily routine, but which end up being a way of practicing more exercise, which also helped to control the disease. The interviewee Teresa, for example, who had no difficulties socializing, but she did find, nevertheless, in her ATD a way to combat the loneliness of her daily life, she saw Cura as a part of her life at all times, saying,

[...] - as I don't have children, having Cura gives me more of a sense of responsibility, she has to have her vaccinations, trips to the vet, food [...] if she's not well, she can't do her job either [...] as I don't have children, she's like my daughter (Teresa).

Sharing a life with an ATD has completely changed the lives of the guardians, both in practical terms of their condition and in social, emotional and physical terms. Mrs. Joana who has been living with an ATD for four months, said: “[...] I consider him part of my family, I can't imagine my life without him and I've only had him for 4 months”. And for Mr. Joaquim, who has been sharing his life with an ATD for at least 3 years, when asked the same question he reply:

In this particular case, he initially came here as a CA and a helper, and after just a few days of being here he was already a new FM [...]. I would venture to say that I have almost as much affection for him as I do for my children (Mr. Joaquim).

Mr. Teófilo, who has lived with his ATD for at least 5 years, answered peremptorily: “First of all, it's just another child, it's a FM!”. These interviews were conducted with guardians who have been living with their ATD for 4 months, 3 years and 5 years respectively. When they were asked the same question about their opinion regarding a helper (ATD), and whether it was a FM or a CA, they unanimously considered their dog to be a FM, even Joaquim said that after only a few days of living together, that he already considered the ATD to be a FM: although he had been given the role of helper in this relationship, the bond between both of them extrapolated to such a feeling of affection that he, the guardian, considers him, the ATD, to be like a ‘son’, just as Teófilo considers the ATD “[...] to be a son [...]”, with whom he shares his life for 5 years already.

It's also important to note that Joana has the same feelings and opinions. In these specific interviews, we can say that the length of time the guardians and ATD's have lived together, although different, has not altered the feeling they expressed for the ATD even as a FM. The feeling they had for the ATD seems to be one of unconditional dependence but also love and affection, and so the length of time they have lived together seems to be an irrelevant factor, because in many examples of different lengths of time they have lived together, their view of the relationship with the ATD is that of a FM.

For example, Ms. Marta, who has been sharing her life with an ATD for about a year and a half, says that she “[...] is a member of the family, I can consider her a little bit of everything, but she's part of my family, she's the ‘sister I never had’”.

Ms. Teresa (who has been living with an ATD for 3 years) mentioned that:

Knowing that it's a bit of everything, if I had to choose, I'd opt for considering her FM, because it will always be a friend, and it will always be a help in my therapy, but it's part of me and she lives with me, so it's a bit of everything (Ms. Teresa).

Although these interviews exert are from guardians who have lived with the ATDs for less time than the guardians mentioned above, it is possible to see a similarity in the feeling they have towards the dogs. Although they haven't lived with the dogs for as long, they consider them to be FM. When they were asked the same question about their opinion on the ATD, and whether it was just a FM or a CA, they unanimously considered dogs to be a FM, including, as Joaquim said, after days of living together, he already considered the ATD a FM, even though he had been given the role of helper. This relationship has extrapolated to such a feeling of affection that Teófilo considers the ATD “[...] to be my son”.

The interviewees' willingness to share their life with a dog was also questioned. All the interviewees showed an interest in sharing their daily life with a dog, and the fact that these ATD are trained to detect diabetes and are an aid in everyday life was a bonus. ATD motivated the choices and encouraged the guardians decide to go for this

In order to better visualize the results of the interviews, we used the ATLAS.TI program to present a 'graphical 'cloud', which is based on the words most frequently mentioned during the interviews. For reasons of space constraints, we only present 1 cloud that shows the words most used by the guardians with the least time spent with the ATD.

As we can see from the graph taken from ATLAS.TI and the interview excerpts described in the results, we can conclude that the word 'routine', 'people', 'dog' or 'family' are some of the most predominant in graphs and interviews.

Final considerations

Even though some of the guardians haven't lived with the ATD for many years, they considered them FM, as do the guardians who have lived with them for longer. According to the results, guardians in general do not depend on the length of time they have lived with the ATD for them to be seen as FM, although the length of time they have lived together strengthens the feeling and bond between the dyad (human/ATD) as time goes by. Both guardians Marta and Teresa consider ATD to be 'a bit of everything': ATD, CA, and FM at the same time.

The fact that ATD can help them in their daily lives has proved that therapies in which the dog is the human helper are possible and that they culminate in the complete well-being of those being cared for. As Robins, Sanders, and Cahill (1991, p. 3) point out, "[...] relations [...] can play in the treatment of and recovery from various physical and psychological illnesses and conditions [...]", which also opens the door to innovative animal-assisted therapy techniques". People have realised many benefits through their interactions with dogs and continue to make even greater use of canine abilities with the evolution of various new relationships. People are imagining new roles for dogs, closely followed by the creation of additional types of assistance dogs and animal-assisted interventions (AAIs) (Hart & Yamamoto, 2017, p. 252): in this case being a dog that alerts to hypoglycaemia, according to the literature as Wells, Lawson, and Siriwardena (2008, p. 1238) state that sharing the life's with ATD "[...] showed behavioural responses to hypoglycaemia, and the frequency and reliability with which these animals alerted their owners to hypoglycaemic episodes was relatively high [...]".

In the social sphere, the dog also had a facilitating effect on the relationships established between the child and other peers (DeMello, 2010, 2012; Haraway, 2013). Dogs acted as 'icebreakers' between peers (DeMello, 2010, 2012; Haraway 2013) and also act as 'social mediators' between peers. Kruger and Serpell (2006, p. 28) even point out that "[...] theorists have suggested that animals stimulate conversation through their presence and unscripted behaviour and by providing a neutral, external subject on which to focus [...]", as well as the way they are perceived by them, as Charles (2014) states that regardless of the wider social context, children usually forged strong emotional bonds with non-humans and these bonds surpass those of an ATD which are then assumed in terms of kinship and friendship. It seems that is easier for children surpassing the barrier between humans and non-humans, to cross the barrier of the last 'non-human' since there is continuity amongst all species (Ridley, 2004; Casanova, 2016). Anthropocentric education, life history, anthropocentric societies can have more weight amongst adults than non-adults.

Morrison (2007, p. 57) in turn makes it clear that "Animals incorporated into therapy for children with developmental disorders can help improve progress".

This could also be confirmed through studies carried out Rooney et al.(2013).

ATD are also a way for humans to feel more secure, because they don't feel so dependent on their dialling devices, and because therapy dogs generally anticipate their hypoglycaemia on average some cases hours before it is coming (Rooney et al., 2013). Interaction with their ATD also proves beneficial in that its positive effects are not only physical, but also psychological, "[...] human subjects experience beneficial psychophysical effects from positive social interaction with pets. These effects include short-term reductions in heart rate and blood pressure (Katcher, 1981) and a variety of long-term psychological benefits" (Serpell, 1981, p. 652).

Our results confirm the objectives we set out at the beginning of this work, and in fact, the coexistence of ATD not only increases the quality of life of the guardian (who can count on the support of the ATD knowing that they have a therapy assistant there to warn them when their blood sugar drops), but the very relationship that is initially established with the ATD quickly goes beyond this condition and the therapy dog and he is seen as FM. The vast majority of guardians said that not only do they consider their dogs to be FM, but that they don't limit themselves to this term alone, as they often said that these dogs were 'a bit of everything', being friends, therapists and ATD in addition to being members of their families, 'four-legged child', 'sister

figure', 'family dog', retaining its position as a 'friendly dog' and original (CA), but with a greater centrality in relation to their role as therapy aids.

As Haraway (2013) points out, the history of humanity is also a history of relationships between human beings and other animals, relationships whose main purpose is to help in various aspects of human life and we had, also to add the life's of the non-human animals.

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