

# **How Do Assistance Dogs Help Their Handlers to Live Their Best Possible Lives?**

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## **Abstract**

Assistance dogs (AD) are highly trained to ameliorate effects of their handler's specific disability, including physical, sensory, psychiatric, intellectual, or other mental disability. ADs are considered to provide numerous physical, psychological and social benefits to their handler that positively affect their life. However, they also present challenges, and are costly to train. Overall, these benefits and challenges remain poorly understood. This thesis aims to increase understanding of how AD's assist their handlers to live their best possible life, focussing on the experiences of first-time handlers. The Thriving Through Relationships theory of social support is used to frame handlers' perceptions of the support provided by ADs. The research employed a mixed-methods approach in order to attain a holistic understanding of handlers' experiences. An initial questionnaire, informed by the Thriving Through Relationships theory, demonstrated that handlers did perceive that their AD assisted them to thrive. To determine more precisely how ADs achieve this outcome, eight longitudinal case studies were then undertaken, drawing on the experiences of first-time handlers and their care networks. The findings corroborated the benefits that have been reported previously and enhanced understanding of the prominent challenges. The information reported in this thesis will enable AD organizations to better prepare handlers for working with an AD and increase best practice initiatives in this emerging field.

## Statement of Authorship

This thesis includes work by the author that has been published or accepted for publication as described in the text. Except where reference is made in the text of the thesis, this thesis contains no other material published elsewhere or extracted in whole or in part from a thesis accepted for the award of any other degree or diploma. No other person's work has been used without due acknowledgement in the main text of the thesis. This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

Signature \_\_

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Date (day, month, year) 15/8/19

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## List of Papers Published During this Thesis

1. Gravrok, J., Bendrups, D., Howell, T., Bennett, P. (in press). 'Thriving Through Relationships' as a useful adjunct to existing theoretical frameworks used in human-companion dog interaction literature. *Human Animal Interaction Bulletin*, accepted July 27, 2019.
2. Gravrok, J., Howell, T., Bendrups, D., & Bennett, P. (2018). Thriving through relationships: assistance dogs' and companion dogs' perceived ability to contribute to thriving in individuals with and without a disability. *Disability and Rehabilitation: Assistive Technology*, 1-8. DOI 10.1080/17483107.2018.1513574
3. Gravrok, J., Howell, T., Bendrups, D., Bennett, P. (under review). Expectations regarding receiving an assistance dog: Perceptions of prospective recipients, family members, and assistance dog instructors. Submitted to *People and Animals: The International Journal of Research and Practice*, December 9, 2018.
4. Gravrok, J., Bendrups, D., Howell, T., Bennett, P. (2019). The experience of acquiring an assistance dog: Examination of the transition process for first-time handlers. *Disability and Rehabilitation*, 1-11. DOI: 10.1080/09638288.2019.1615561
5. Gravrok, J., Bendrups, D., Howell, T., Bennett, P. (2019). Beyond the benefits of assistance dogs: Exploring challenges experienced by first-time handlers. *Animals* 9(203), 1-12.
6. Gravrok, J., Howell, T., Bendrups, D., Bennett, P. (under review). The influence of contextual factors on an individual's ability to work with an assistance dog. Submitted to *Qualitative Health Research*, August 9, 2019.
7. Gravrok, J., Howell, T., Bendrups, D., & Bennett, P. (2018). Adapting the traditional guide dog model to enable vision-impaired adolescents to thrive. *Journal of Veterinary Behavior: Clinical Applications and Research*, 24, 19-26.

## **List of Conference Presentations during this Thesis**

Gravrok, J., Howell, T., Bendrups, D., Bennett, P., Guide dogs for kids: Expectations of stakeholders. International Working Dog Conference. Banff, Canada. April 2017

Gravrok, J., Howell, T., Bendrups, D., Bennett, P., Do dogs help people to thrive, and are assistance dogs more beneficial than companion dogs? International Society for Anthrozoology. Sydney, Australia. July 2018

## Declaration for Thesis Based or Partially Based on Conjointly Published or Unpublished Work

This thesis includes 6 original papers published (or accepted) in peer-reviewed journals and 1 unpublished publication. The ideas, development and writing up of all the papers in this thesis were the principal responsibility of myself, the candidate, working within the School of Psychology and Public Health under the supervision of Professor Pauleen Bennett, Dr. Tiffani Howell, and Dr. Dan Bendrups. The inclusion of the co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research.

The undersigned hereby certify that:

1. The below declaration correctly reflects the nature and extent of the candidate's contribution to this work, and the nature of the contribution of each of the co-authors;
2. They meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
3. They take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication
4. There are no other authors of the publication according to these criteria; and
5. Potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit

Table 1  
*Publications and Author contributions*

Publication Status	Publication Title	Author contributions
Paper 1 Accepted	Thriving Through Relationships' as a useful adjunct to existing theoretical frameworks used in human-companion dog interaction literature	70% of the initiation, data collection, key ideas, development and writing up of the work. Gravrok  10% Howell; 10% Bendrups; 10% Bennett
Paper 2 Published	Thriving through relationships: assistance dogs' and companion dogs' perceived ability to contribute to thriving in individuals with and without a disability	70% of the initiation, data collection, key ideas, development and writing up of the work. Gravrok  10% Howell; 10% Bendrups; 10% Bennett

Paper 3 Accepted	Expectations regarding receiving an assistance dog: Perceptions of prospective recipients, family members, and assistance dog instructors	70% of the initiation, data collection, key ideas, development and writing up of the work. Gravrok  10% Howell; 10% Bendrups; 10% Bennett
Paper 4 Published	The experience of acquiring an assistance dog: Examination of the transition process for first-time handlers	70% of the initiation, data collection, key ideas, development and writing up of the work. Gravrok  10% Howell; 10% Bendrups; 10% Bennett
Paper 5 Published	Beyond the benefits of assistance dogs: Exploring challenges experienced by first-time handlers	70% of the initiation, data collection, key ideas, development and writing up of the work. Gravrok  10% Howell; 10% Bendrups; 10% Bennett
Paper 6 Under review	The influence of contextual factors on an individual's ability to work with an assistance dog	70% of the initiation, data collection, key ideas, development and writing up of the work. Gravrok  10% Howell; 10% Bendrups; 10% Bennett
Paper 7 Appendix D Published	Adapting the traditional guide dog model to enable vision-impaired adolescents to thrive	70% of the initiation, data collection, key ideas, development and writing up of the work. Gravrok  10% Howell; 10% Bendrups; 10% Bennett

Name	Signature	Date
Jennifer Gravrok		15/8/19
Pauleen Bennett		15/8/19
Tiffani Howell		13/8/19
Dan Bendrups		15/8/19

## **Terminology**

There are terms used throughout this thesis that may be understood through colloquial or scientific means. For clarity, the following definitions are provided.

### People with disabilities

To respect people who experience disabilities throughout this thesis, people-first language, such as “people with disabilities” are used rather than “disabled people,” as the former is more socially acceptable in psychology (Halmari, 2011). People-first language emphasizes and recognizes the personhood or role of the person within their life as being more important than their disability. This terminology is considered respectful and inclusive (Dunn et al. 2015) as it enables the individual to take ownership of their disability rather than being labeled by it (Deegan, 1997). This language has been recommended by people who experience disabilities (Deegan, 1997), researchers (Ward & Trigler, 2001) governments (Titchkosky, 2001) and the International Classification of Impairments Disabilities and Handicaps (Badley, 1993). The importance of respecting this terminology is evident in the number of people impacted by disability. World disability statistics estimate that 15% of the world’s population lives with a disability, a figure which increases annually (World Health Organization, 2011).

### Participants

The term “participants” was used to describe the individuals who participated in the presented research. “Participants” emphasizes the interactive role they played throughout the studies (Watson, 2012) and acknowledges their significant contribution to



this thesis. All participants were recognized as individuals as their life circumstances, and experience with disability, were qualitatively different from each other.

### Assistance dogs

Assistance dogs (AD) are “trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability. A direct link must exist between the animal’s work or tasks and the handler’s disability” (Gillett & Weldrick, 2014, p. 36). Assistance Dogs International, a regulating body of member AD organizations around the world, recognizes three types of ADs: guide dogs, hearing dogs and service dogs (Assistance Dogs International, 2019). Service dogs are further divided into mobility dogs, autism ADs, psychiatric service dogs, seizure alert dogs, diabetes alert dogs and medical alert dogs (see Table 2).

Table 2

*Description of the most common types of assistance dogs, who they assist and what they do*

Assistance dog types	Who they assist	What they do	Relevant references
Guide Dogs	People with visual impairments or traumatic brain injury affecting vision	Assist handler to safely navigate through the environment. This requires good spatial awareness. Skills include walking in a straight line unless manoeuvring around obstacles, stopping at curbs, alerting to traffic, disobeying dangerous commands.	(Whitmarsh, 2005; Wiggett-Barnard & Steel, 2008)
Mobility Dogs	People with mobility impairments	Physically assist handler, who may be wheelchair dependent, rely on another assistive device, or have other challenges, including balance difficulties. Skills include retrieval of items, opening doors, turning on and off lights, assisting a wheelchair up an incline, dressing, other hygiene tasks.	(Crowe et al., 2014; Hubert, Tousignant, Fouthier, Corriveau, & Champagne, 2013; Winkle, Crowe, & Hendrix, 2011)

Hearing Alert Dogs	People with a hearing impairment	Alert handler to specific sounds in their environment. Sounds include alarms, telephone, doorbell and more.	(Guest, Collis, & McNicholas, 2006; Hart, Zasloff, & Benfatto, 1996; Ralli et al., 2019)
Autism Assistance Dogs	People (often children) with Autism Spectrum Disorders (ASD)	Safeguard handler from dangerous situations and prevent them from running away. Skills include staying calm in chaotic situations to decrease anxiety, emotional outbursts and improving sleep quality.	(Burrows, Adams, & Spiers, 2008; Hall, Wright, Hames, Mills, & Team, 2016)
Psychiatric Service Dogs	People with mental health disabilities	Assist handler with symptoms or effects of their specific mental health disorder. Skills include alerting to or interrupting specific behaviors like panic attacks, night terrors, self-injurious or harmful behavior as well as creating a personal boundary or leading them to a named safe place.	(Esnayra & Love, 2012; Stern et al., 2013; M. F. Taylor, Edwards, & Pooley, 2013)
Seizure Alert/Response Dogs	People with a seizure disorder or epilepsy	Warn handler of an impending seizure and/or protect handler from harm during and/or after a seizure. Some perform both roles. Skills include recognizing and reacting to signs of an impending seizure early enough for the handler to take preventive medication or move to a safe place, recruiting help, laying on the handler, stimulating the handler through licking.	(S. Brown & Strong, 2001; Dalziel, Uthman, McGorray, & Reep, 2003; Plowman, Bowan, & Williams, 2009)
Diabetes Alert Dogs	People with diabetes	Alert handler to potentially life-threatening changes in blood glucose level before they are aware.	(Petry, Wagner, Rash, & Hood, 2015; Rooney, Morant, & Guest, 2013)
Medical Alert/Response Dogs	People with various medical conditions	Alert handler to potentially life-threatening medical conditions before they are aware. Seizure alert and Diabetes alert are subclasses of medical alert dogs	(Marcus, 2012)

*Note.* The medical alert dog category is a broad and growing category that currently contains seizure alert/response dogs, diabetes alert dogs, allergy detection dogs and dogs for conditions such as Postural Orthostatic Tachycardia Syndrome (POTS). However, seizure alert/response dogs and diabetes alert dogs are sufficiently established and are, therefore, each considered an independent category.

The term ‘assistance dog’ had been interchangeable with ‘service dog’ across the world for many years (Walther et al., 2017). However, preferred terminology has changed from being indiscriminate to preferring the term AD throughout the progress of this thesis. The change in terminology preference was determined by leading experts in the field at the International Society of Anthrozoology Conference in 2018, from which a publication is forthcoming. Therefore, this thesis will consistently use the term assistance dog (AD).

In Australia, the more traditional types of ADs (guide, hearing and mobility ADs) have had a longer presence in society than newer types of ADs. According to their websites, organizations providing traditional types of ADs originated in Australia well before the Disability Discrimination Act of 1992 was enacted which outlines the definition of ADs (“Disability Discrimination Act,” 1992). The newer types of ADs emerged in Australia after 1992 and are also recognized under this act, however they are generally less well recognized within society. Legally, the Disability Discrimination Act of 1992 states that “the legal definition of an assistance animal as a dog or other animal that:

- (a) Is accredited under a State or Territory law to assist a person with a disability to alleviate the effects of disability; or
- (b) Is accredited by an animal training organization prescribed in the regulations; or
- (c) Is trained to assist a person with a disability to alleviate the effect of the disability and meets standards of hygiene and behaviour that are appropriate for an animal in a public place.”

### Handler versus Owner

Since ADs and companion dogs (CD) were both involved in this study, the terminology used reflects the type of relationship an individual has with these types of dogs. The term employed for an individual who uses an AD is “handler.” A person who has a CD, commonly referred to as a “pet,” will be indicated by the term “owner.” The use of the term owner has been debated, and abandonment encouraged to avoid objectifying animals (Carlisle-Frank & Frank, 2006). However, it was used here as it has common usage and meaning, as has been reasoned elsewhere (Dotson & Hyatt, 2008). Specific situations use handler and owner.

## Abbreviations

AD	Assistance dog
CD	Companion dog
HAI	Human-Animal Interaction
TTR	Thriving Through Relationships

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## CHAPTER 1: Introduction

*Meet Zoe, a vibrant, social, outdoor enthusiast who acquired a severe mobility impairment as an adult. Consequently, Zoe experienced severe morning depression from waking up alone, trapped in a bed, waiting for her carer to let themselves into her home, before starting her day. Accordingly, she was longing for other forms of assistance. After waiting two years, Zoe received Zeus, a mobility assistance dog (AD), who was trained to provide physical assistance such as opening doors and picking things up off the floor. Zeus was helpful in this way, but Zoe also received many additional physical, psychological and social benefits from Zeus that increased her wellbeing. These included benefits that other supportive individuals cannot provide, such as enabling independence. In the first year with her AD, Zeus had helped Zoe to better her life, beyond merely increasing her quality of life.*

Zoe is not alone. Physical, psychological and social benefits associated with ADs have been widely reported (for review, see Winkle et al., 2011), although they remain poorly understood. The prevalence of ADs as a form of assistive technology is expanding into new areas where the benefits are less clear cut and where the handlers may be less equipped to manage an AD than for established types of ADs such as hearing and guide dogs. For government agencies, which may be asked to fund USD 30,000+ per AD (Ng, James, & McDonald, 2000; Wirth & Rein, 2008), the existing evidence is not sufficient to justify funding the newer types of ADs (Howell, Bennett, & Shiell, 2016). Therefore, a greater understanding of the implications arising from AD provision is needed.

This thesis aims to increase understanding surrounding an AD's ability to assist a person to live their best life. This is accomplished, first, by understanding whether ADs are perceived to assist a person to live their best life and, second, understanding how ADs do this. This includes creating an increased understanding of the potential impact ADs

have for people with disabilities. The thesis reveals previously undocumented challenges associated with the acquisition of an AD. Making this information available to AD organizations working in the industry will facilitate the development of best practice initiatives and enhance disability assistance.

The World Health Organization defines disability as “any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being” (Badley, 1993; World Health Organization, 1980). The impact and severity of a disability can be broad. Impairments themselves are variable as they may be temporary or permanent, reversible or irreversible, acquired or congenital, progressive or regressive (World Health Organization, 1980). Complex interactions between societal, environmental and personal life circumstances can influence disabilities (Watson, 2012). Therefore, people who experience similar life circumstances and the same impairment will be affected differently (Dunn & Andrews, 2015; Watson, 2012).

Of the life circumstances that impact disability, society’s role is increasingly emphasized as oppressing people with impairments by contributing to or exacerbating their experience of disability through cultural, social and environmental barriers, such as negative attitudes or inaccessible locations (Dunn & Andrews, 2015; Oliver & Barnes, 2010; Watson, 2012). Despite these socially constructed adversities, people with disabilities often perceive that they have a good quality of life (Ortiz, 2017; Pangalila, 2016; Werner, 1989). Quality of life is based on how a person measures the ‘goodness’ of their physical, psychological, social and environmental values (Theofilou, 2013). This discrepancy is known as the disability paradox (Albrecht & Devlieger, 1999). As ADs



facilitate positive social interactions within society through the social catalyst effect (Guest et al., 2006; McNicholas & Collis, 2000), they may contribute to society viewing people with disabilities more positively. This positive perception may minimize the disability paradox and further increase people with disability's quality of life. Increased understanding is needed for the perceived ways that ADs influence their handlers' lives.

Existing research that attempts to explain the benefits of ADs has drawn primarily on a theory base grounded in human relationship research, which has been applied post hoc to the human-animal interaction (HAI) literature. Various theories have been proposed and implemented in the HAI and AD literature, such as the biophilia hypothesis (Kloep, 2016), attachment theory (Fallani, Previde, & Valsecchi, 2006, 2007) and social support (Lane, McNicholas, & Collis, 1998; Whitmarsh, 2005). These theories, however, are insufficient to explain the specific benefits provided by ADs (see Chapter 2; Gravrok, Bendrups, Howell, & Bennett, accepted 2019). A recent theory, with the potential to further enhance this understanding, the Thriving Through Relationships (TTR) theory of social support (Feeney & Collins, 2012, 2014, 2015a, 2015b) formed a theoretical framework for the work employed in this thesis.

The TTR theory is based on the psychological concept of thriving and emphasizes the importance of supportive relationships to assist a person to thrive in both times of adversity and normalcy (Feeney & Collins, 2015a, 2015b). Thriving is described as – “the joint experience of development and success, which can be realized through effective holistic functioning and observed through the experience of a high-level of well-being and a perceived high-level of performance” (Brown, Arnold, Fletcher, & Standage, 2017, p. 174). ADs are commonly perceived to provide social support and form a strong

relationship with their handler (Lane et al., 1998; Whitmarsh, 2005). They also increase wellbeing (Collins et al., 2006; Plowman et al., 2009) and performance (Crowe, Nguyen, Tryon, Barger, & Sanchez, 2018; Crowe et al., 2014). In principle, then, this theory could provide a foundation to enhance understanding of how ADs provide the benefits handlers receive from working with an AD.

## **1.1 Scope**

This thesis focused specifically on ADs. Other types of working dogs were not considered and companion dogs (CDs) were included only as a comparison. These types of dogs form a different relationship with humans and have separate research bases (Barker & Wolen, 2008; Cutt, Giles-Corti, Knuiman, & Burke, 2007; Helton, 2009). The research presented in Chapter 2 and Chapter 3 consider the supportive role of CDs, but they are otherwise absent from the broader scope of this thesis as the need for knowledge concerning human relationships with ADs was pressing (Howell et al., 2016). A large portion of this thesis focused specifically on the experiences of first-time AD handlers, as repeat handlers (typically due to the retirement of their current AD) have prior experience and expectations of ADs which could impact the experiences and relationship formed (Lloyd, Budge, La Grow, & Stafford, 2016).

The scope of this thesis was constrained by a requirement to complete the degree within three and a half years, which was balanced against the length of time that future handlers must wait to receive an AD. This time can vary from months to years, due to high demand and the limited number of ADs available from AD organizations at any given time. The timeframe was also affected by the inability of AD organizations to determine an exact placement time of an AD for most clients.

## 1.2 Approach

To increase understanding of how an AD can assist a person to live their best life, and to examine the applicability of the TTR theory to this field, I first wanted to know, *do handlers perceive that their dog assists them to thrive?* Then, if supported, *how do ADs assist their handler to thrive?* or more generally, increase their ability to live their best possible life. To accomplish this, an understanding of AD handlers' lived experience working with an AD was essential. This necessitated using a mixed-method approach, as the first question is inherently quantitative and the second question is inherently qualitative.

The current AD literature has many limitations (Howell et al., 2016; Modlin, 2000). The overall quantitative and qualitative methods employed in this thesis attempted to address limitations common in other AD studies, which will be described next. The presented papers describe specific methods employed for each study, so they are not repeated here.

### 1.2.1 Question one: quantitative methods

A quantitative survey was designed to answer question one, whether handlers perceive that their AD assists them to thrive. This study was designed to apply the TTR theory within the survey and gain a larger sample size compared to other AD studies. Application of a theory before analysis is rarely done in AD literature yet enables more certainty in the outcomes than post hoc theory application. Additionally, quantitative methodologies in AD studies commonly have relatively small sample sizes, ranging from 22 (Kirton, Winter, Wirrell, & Snead, 2008) to 135 (Petry et al., 2015), due to small AD organizations that place relatively few dogs per year (Walther et al., 2017). This reduces

the number of potential participants and possibly limits application to the broader AD population. The quantitative study presented in Chapter 3 recruited 530 participants, of which 164 were AD handlers.

### ***1.2.2 Question two: qualitative methods***

To understand each handler's experiences and perceptions regarding how their AD assists them to live their best possible life, phenomenology was employed.

Phenomenology was beneficial as it involves the psychological study of subjective experiences (Krefting, 1991), and is interested in understanding a person within their environment (Benner, 1994) and how they experience the world (Van Manen, 1997).

Phenomenology believes that the relationships between an individual's behaviors, values and experiences can only be truly understood and appreciated within this context (Benner, 1994).

To understand this phenomenon, case studies were employed. Case studies involve an in-depth study of the case or phenomenon under consideration (Hamel, Dufour, & Fortin, 1993) and were appropriate because people with disabilities are highly individualized. This approach must be carried out in the real world, as the boundaries between the phenomena and context may not be apparent and the researcher has little or no control over the set of events (Yin, 2014). Both the phenomenon and context must be considered, allowing for the various influences of the phenomena to be revealed (Yin, 2014). Case study methods are variable based on what is to be studied (Hamel et al., 1993) but can be triangulated to corroborate information (Yin, 2014). Therefore, case studies offered the best opportunity to understand this phenomenon, even though they are often over-represented in the AD literature (Howell et al., 2016).

Compared to most case studies in the AD literature, this study addressed other common limitations by including a reasonably large sample of participants in a non-retrospective longitudinal design. Eight handlers were involved, which exceeded many case study designs that only involve one participant (O'Connor, O'Connor, & Walsh, 2008; Tauveron, Delcourt, Desbiez, Somda, & Thiéblot, 2006). Additionally, data for this study were collected at four time points over a year, which enabled understanding of how an AD changes or influences a person's life over time. Longitudinal designs are increasing in the AD literature but are still not common. The first data collection time point occurred before the handler received their dog, and therefore, it was not necessary to rely on retrospective analysis; furthermore, the repeated measures enabled each participant to act as their own control. Commonly, AD studies employ wait-list controls (Fecteau et al., 2017; Kopicki, 2016; Yarborough et al., 2017) or decide not to include controls (Camp, 2001; Herlache-Pretzer et al., 2017; Lessard et al., 2018) because people with disabilities are unique.

An important part of the case studies was the acquisition of information from more than one individual. Gaining knowledge about the main participant (handler) via other sources is common in AD and disability studies, especially for individuals with an intellectual disability or who are children (Leonard, 2017). AD studies with children, for example, often only interview the parents (Burrows, Adams, & Spiers, 2008; Rooney et al., 2013). This information may be subject to bias (Leonard, 2017) and not represent the perspective of the handler. To combat this, this study interviewed the handler, a family member, carer/other and the AD instructor. These perspectives were important to

increase reliability as the data could be triangulated, which increased the validity of the outcomes presented (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014).

All handlers nominated at least one person (family member or carer), who they interacted with daily and knew well, to participate in the case studies. Parents were most commonly nominated. Others included carers, whose perspective was important to consider, when applicable, as they often had a prominent role in the handler's daily life (McCluskey, 2000), yet they were not related to the handler and potentially experienced different motivations. Additionally, AD instructors, who taught the dog and handler to work together, were valuable perspectives to acquire as they knew the specific dog-handler relationship well and had different experiences with, and perspectives of, the handler. Ethical concerns when working with cognitively capable adult handlers often limit researchers from gaining perspectives from more than one individual. Since all handlers nominated the other individuals themselves, they consented for the other person to talk about them.

To obtain the most information possible from the case study participants various methods were employed, including behavior observation, photovoice, description of specific expectations and experience sampling methods. The only data presented in this thesis are from interviews, as the other methods were found to corroborate the interview data without adding substantially to it. Additionally, the other methods were challenging for participants and required many amendments. So, as the project advanced, the range of methods was streamlined to make participation as easy as possible. Appendix A presents these methodological considerations for reference. These amendments ultimately enhanced the quality of the presented studies.

### ***1.2.3 Reflexive account***

Due to the heavy reliance on qualitative design and phenomenological approach within this thesis, it was essential for me to be self-reflexive (Krefting, 1991). Typically, in work such as this, the researcher is involved with the phenomena, developing an understanding through critical reflection and writing, resulting in careful descriptions of the phenomena being studied (Van Manen, 1997). Therefore, it was crucial to consider the factors that could impact the subjectivity of the data, including my perspectives and biases regarding the information gathered and the results presented. My experience with ADs and disabilities are important to understand.

First, I do not have a disability, nor do any members of my immediate family. I had brief experience volunteering with people with disabilities before this study, but most of my experiences took place throughout the candidature. Therefore, I familiarized myself with my participants' disabilities prior to meeting them. During the initial interaction, I was cognizant of how the participants would react to me, as I do not have a disability and I was a foreigner to their inner circle, into which I was requesting access. Although everyone seemed to accept me, I was not equal to them; I was the researcher, not their friend. Over time and in a few cases, I felt that this relationship shifted to being more than just the researcher to some participants. I received a friend request on Facebook from one participant and a small dog-related mug at Christmas from another participant, which I believed to indicate that we had a good relationship.

Second, as I have never had a disability, I have never had an AD. However, as my participants began receiving their ADs, I became a volunteer puppy raiser for a puppy named Patty, for a large guide dog organization in Victoria, Australia. This experience

enhanced my understanding of and empathy toward what my participants were experiencing, as I found that many handlers had similar challenges with their AD compared to my puppy. For example, one participant's description of her AD's fear period resonated with me as Patty was going through a fear period at the same time, allowing me to empathize with her. In these instances, I felt that sharing these experiences created a stronger connection to the handler. Considering this, I knew I could not directly compare experiences, nor fully understand what my participants were going through, as I do not have a significant disability impacting my life. I felt strongly that my participants' struggles were more prominent than my own.

I believe that through my desire to understand what their lives were like, handlers felt more comfortable to share with me. During interviews, I made a conscious effort to keep an open mind to everything discussed, but to remain critical when writing notes or analyzing information. Overall, my experiences may have influenced the study, the presented results and my participants lives (Banister, Burman, Parker, Taylor, & Tindall, 1998). Rather than trying to eliminate this possibility, I embraced it and tried to understand the effects I was having on the participants.

### **1.3 Overview of thesis structure**

This thesis contains eight chapters. Chapter 2 reviews the theories commonly used in HAI literature and examines the potential applicability of using the TTR theory to explore the benefits that dogs provide to humans. It was determined through the process of writing this chapter that the TTR theory offered an exciting new perspective, and it was subsequently used to inform development of a survey presented in Chapter 3. The survey study explored whether individuals perceive that their dog assists them to thrive.



Chapters 4, 5, 6 and 7 document eight intensive case studies that were conducted longitudinally with first-time AD handlers and their support networks, from initially waiting for an AD to one year after working with their dog. Finally, Chapter 8 presents a discussion to summarise the research findings and increase understanding of how ADs assist their handler to live their best life.

Chapter 2 includes a review paper titled “‘Thriving Through Relationships’ as a useful adjunct to existing theoretical frameworks used in human-companion dog interaction literature.” This review provided a basis for using the TTR theory by comparing it with commonly used constructs in the HAI literature. It subsequently explained the TTR theory’s relevance to understanding human-dog relationships and human-AD relationships more specifically. This chapter forms the theoretical basis for the subsequent investigations.

Chapter 3 includes a published quantitative survey study titled “Thriving Through Relationships: Assistance dogs’ and companion dogs’ perceived ability to contribute to thriving in individuals with and without a disability.” The purpose of this study was to determine whether AD handlers perceive that their dog assists them to thrive by providing benefits that align with the TTR theory framework. It also explored the differences between ADs and CDs. The study demonstrated that AD handlers do perceive that their dog assists them to thrive and thereby provided a foundation for further investigation into perceptions of how ADs achieve this outcome.

Chapters 4, 5, 6 and 7 expand upon this work and present eight longitudinal case studies. Chapter 4 explores expectations first-time prospective AD recipients and their support networks had before the handler received their dog. The paper titled

“Expectations regarding receiving an assistance dog: Perceptions of prospective recipients, family members, and assistance dog instructors” presents the results. Following the paper, a discussion is presented regarding the influence of the AD organizations’ preparation of first-time handlers, as these experiences could influence the handlers’ perceptions of working with the AD.

Chapter 5 reports handlers’ experiences of initially working and living with their AD one month after receiving their dog. Their experiences were presented in a paper titled “The experience of acquiring an AD for first-time handlers: a look at the transition process.” The results are subsequently discussed concerning their prior expectations and the training that they received.

Chapter 6 expands on Chapters 4 and 5 by reporting on interviews with participants at two later periods, up to one year after each handler received their dog. This work is titled “Beyond the benefits of assistance dogs: Exploring challenges experienced by first-time handlers.” The results from this long-term follow up are discussed in terms of the transition of their experiences over time.

Chapter 7 explores select case studies longitudinally, rather than as the snapshots described in previous chapters. This enabled a holistic perspective of how various contextual factors influenced experiences of acquiring and working with an AD. This chapter includes a paper titled “The influence of contextual factors on an individual’s ability to work with an assistance dog.”

Chapter 8 concludes the thesis by providing a general discussion of the overall results. Specifically, *how* ADs provide benefits is considered. Then the factors and

influences that contribute to whether and how a handler receives these benefits are discussed in depth. Additionally, implications, limitations and suggestions for future research are discussed.

## **CHAPTER 2: A theoretical framework for understanding human-dog relationships**

To understand an AD's ability to assist a person to live their best possible life, it is essential to consider theoretical foundations within which these benefits may be understood. The aim in this chapter is to provide the theoretical framework and context for the subsequent studies. This background chapter initially provides a brief review of the benefits that CDs are reported to provide. CDs share many essential qualities with ADs and are more prevalent in the literature, making it easier to access discussions about mechanisms thought to underlie their positive impacts on humans. The prevailing theories used to describe human-animal relationships (primarily CDs) are then discussed in a critical review accepted for publication in the *Human-Animal Interaction Bulletin* in July 2019, titled "Thriving Through Relationships" as a useful adjunct to existing theoretical frameworks used in human-companion dog interaction literature." This review has two main sections. First, it reviews and compares the three prevailing theories used to explain the benefits of HAIs, especially the human-dog relationship: biophilia hypothesis, attachment theory and social support. Subsequently, it compares the TTR theory to the previously mentioned theories and applies it to human-dog relationships. Following this paper, a discussion and application of thriving within the disability and AD context occur.

### **2.1 Benefits from the presence of a dog**

Dogs are one of the most successful domesticated species because of their ability to assist humans in numerous ways (Udell, Dorey, & Wynne, 2010). The qualities dogs

have, which provide benefits to humans, have been selected for throughout domestication and can be enhanced further through training (Udell et al., 2010). Not all dogs receive the extensive training that ADs receive to provide benefits, yet a CD's presence is also known to provide various benefits (Andreassen, Stenvold, & Rudmin, 2013; Ng et al., 2000), such as alleviating loneliness (Turner, 2006). There are many speculations regarding how dogs provide benefits.

The physiological benefits from petting a dog (i.e. increased immune system functioning (Charnetski, Riggers, & Brennan, 2004), lowered heart rate (Jenkins, 1986) and lower blood pressure (Vormbrock & Grossberg, 1988)), have been proposed to arise from responding to the physical proximity, touch, warmth and responsiveness of the dog (Yorke, 2010). These benefits could also be due to shifting the individual's attention from themselves and their internal concerns (e.g. worry, anticipation or expectancy) to the dog (Crouse, 2014; Vormbrock & Grossberg, 1988), distracting them from stress, mental health or adverse events. The absence of this internal thought pattern has been believed to assist an individual in altering their cognitive appraisal of a stressor, thereby influencing stress perception, physiological arousal and coping (Epel, McEwen, & Ickovics, 1998), ultimately leading to more positive life outcomes.

Additionally, a calm dog provides further benefits, including facilitating increased relaxation (Crowe et al., 2018; Lane et al., 1998; Valentine, Kiddoo, & LaFleur, 1993; Vincent et al., 2017) and feeling safe (Fairman & Huebner, 2001; Taylor et al., 2013; Valentine et al., 1993). These benefits could be due to the chameleon effect – the “nonconscious mimicry of the postures, mannerisms, facial expressions, and other behaviors of one's interaction partners, such that one's behavior passively and

unintentionally changes to match that of others in one's current social environment" (Chartrand & Bargh, 1999, p. 893). This is additionally supported by the differential emotions theory, which suggests that imitation of behavior is the connection that allows one individual to adopt another individual's internal mental state (Gergely & Watson, 1996). Therefore, the calm presence of an individual could provide reassurance or induce relaxation in others nearby (Friedman & Riggio, 1981). As such, a dog's calm, relaxed nature may demonstrate to an individual that there is nothing to worry about and they are safe. This behavior could consciously or unconsciously allow an individual to mirror the dog's relaxed energy. Although this makes intuitive sense, researchers do not know whether humans mirror their dog's behaviour.

The benefits resulting from the presence of CDs are well known. The mechanisms to achieve the benefits, however, remain poorly understood. The three constructs most commonly proposed to explain the benefits provided by dogs include biophilia hypothesis, attachment theory and social support. The paper presented next explores these constructs.

## **2.2 Paper 1: ‘Thriving Through Relationships’ as a useful adjunct to existing theoretical frameworks used in human-companion dog interaction literature**

Gravrok, J., Bendrups, D., Howell, T., Bennett, P. (in press). ‘Thriving Through Relationships’ as a useful adjunct to existing theoretical frameworks used in human-companion dog interaction literature. *Human Animal Interaction Bulletin*, accepted July 27, 2019.

The letter of acceptance from Human Animal Interaction Bulletin is presented in Appendix B.

1    **Title:** ‘Thriving Through Relationships’ as a useful adjunct to existing theoretical  
 2    frameworks used in human-companion dog interaction literature

3    **Abbreviated title:** Thriving through relationships with companion dogs

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## 9    **Abstract**

10            The relationship formed between a human and a dog can be transformative.  
11    Human-Animal Interaction (HAI) research aims to understand why these relationships  
12    are so important. Within this field, human-dog relationships have been explained through  
13    various theoretical constructs, of which the ‘biophilia hypothesis’, ‘attachment theory’  
14    and ‘social support’ are the most common. However, none of these constructs completely  
15    explain the benefits that human-dog relationships can provide. In this paper, a new  
16    theory, the Thriving Through Relationships (TTR) theory, is applied to human-dog  
17    relationships, in order to ascertain its capacity to further explain the benefits that dogs can  
18    provide to humans. The TTR theory proposes mechanisms for immediate and long-term  
19    indicators of thriving, which may add new insight into how human-dog relationships are  
20    beneficial. Multiple dimensions of thriving are used to explain how a supportive other  
21    could assist an individual to thrive, both in the face of adversity and during times of  
22    relative normalcy. The TTR theory may, therefore, enhance understanding of the  
23    transformative potential of human-dog relationships.

24    **Keywords** social support, attachment theory, biophilia hypothesis, service dog, assistance  
25    dog

26

27 'Thriving Through Relationships' as a useful adjunct to existing theoretical frameworks used in  
 28 human-companion dog interaction literature

29

### 30 **Introduction**

31 Humans and animals interact with each other in an interconnected world in which some  
 32 human-animal relationships are prioritized. This is the case for all domesticated animals,  
 33 including dogs. Dogs have the privilege of sharing human homes and are often viewed as  
 34 'members of the family' (S. P. Cohen, 2002; Modlin, 2008). According to existing research in  
 35 the field of human-animal interactions (HAI), this relationship can provide many benefits to  
 36 humans, including decreased anxiety (Burrows, Adams, & Spiers, 2008; Butterly, Percy, &  
 37 Ward, 2013; Kirton, Winter, Wirrell, & Snead, 2008; Valentine, Kiddoo, & LaFleur, 1993), and  
 38 increased companionship (Putney, 2014; Rew, 2000) and sociability (Brooks, Rushton, Walker,  
 39 Lovell, & Rogers, 2016; S. Ryan & Ziebland, 2015).

40 While the benefits provided by companion dogs are widely accepted (Barker & Wolen,  
 41 2008; Friedman & Krause-Parello, 2018), the theoretical frameworks for understanding how  
 42 dogs provide these benefits merit closer attention. One approach that has been pursued in HAI  
 43 research is to apply various constructs, including human-human relationship theories to human-  
 44 dog relationships. Though there is no single theory that underpins this approach (O'Haire, 2010;  
 45 Wright, 2018), three theoretical constructs, predominate in the field: the biophilia hypothesis,  
 46 attachment theory and social support (Amiot & Bastian, 2015; O'Haire, 2010). While these  
 47 constructs have been applied to various human-animal relationships, in reviews of companion  
 48 animal studies the human-companion dog relationship is most commonly discussed (Barker &  
 49 Wolen, 2008; Friedmann & Son, 2009) and therefore deserves specific attention. However, it is  
 50 recognized that these theories potentially apply to other human-animal relationships as well.

51           The purpose of this paper is to examine how these three constructs have been used in dog  
 52 related HAI research and to introduce a new theory, the Thriving Through Relationships (TTR)  
 53 theory. This theory has not previously been applied in HAI research, but it might be useful as an  
 54 adjunct framework for human-dog research. We outline the TTR theory and examine how  
 55 specific elements of this theory might help to provide an enhanced understanding of human-dog  
 56 relationships.

57

## 58                           **Common constructs applied to human-dog relationships**

### 59   **Biophilia hypothesis**

60           “Biophilia” means love of life or living systems ("Biophilia," 2012). As described by  
 61 Wilson (1984), humans express “biophilic tendencies” through actions such as seeking  
 62 connection with nature, or with other living things. The biophilia hypothesis, which was first  
 63 proposed by Wilson, and further expanded by Kellert (Kellert, Heerwagen, & Mador, 2011),  
 64 suggests that these tendencies are innate, especially with animals, because they are adaptive in an  
 65 evolutionary sense.

66           The biophilia hypothesis is useful to HAI research because of the observation that  
 67 humans’ attraction to animals (as elements of ‘nature’) is stronger than to inanimate objects in  
 68 the environment (LoBue, Bloom Pickard, Sherman, Axford, & DeLoache, 2013). Within the  
 69 HAI literature, the biophilia hypothesis is often applied to human-dog relationships (Cutt, Giles-  
 70 Corti, Knuiman, & Burke, 2007; Serpell, 1996), as well as to the specific positive effects of these  
 71 relationships (Kruger & Serpell, 2006). However, the theory sits within a contested  
 72 nature/nurture debate about whether human feelings towards nature are innate, or learned (Kahn,  
 73 1997; Serpell, 2004) and developed (Garrett, 2007). Often, the learned, ‘nurture’ argument for

74 biophilia outweighs the ‘nature’ one (Wright, 2018). This contestation is significant to the HAI  
 75 context because, in HAI literature as well as in more generalist writing, humans are often  
 76 described as expressing biophilic tendencies toward dogs *because of* our collective interspecies  
 77 evolutionary history (Wang et al., 2013). Meanwhile, peoples’ fear of dogs is often described as  
 78 *stemming from* learned experiences (Doogan & Thomas, 1992). Typically, neither of these  
 79 assertions is entirely amenable to empirical verification.

80         The biophilia hypothesis framework lacks measurement tools or evaluative processes for  
 81 measuring or understanding the putative effects of animals on humans, and this has led  
 82 influential researchers to dismiss instinctive affiliation or attraction to animals as a verifiable  
 83 factor in human-dog interactions (Herzog, 2002; Kruger & Serpell, 2006). Thus, while the  
 84 biophilia hypothesis can provide a basis for understanding the psychological and emotional  
 85 satisfaction that a person can receive from interacting with any living thing (Wright, 2018), it  
 86 cannot provide any deeper insight into the specifics of HAI. As Joye and De Block (2011) note,  
 87 practically any interaction with nature can be made to fit the hypothesis. Meanwhile, Feeney has  
 88 gone so far as to dismiss the biophilia hypothesis as an ‘abstraction’ in relation to the human-  
 89 animal bond (P. Feeney, 2010). In light of these contributions, it seems clear that biophilia has  
 90 only limited capacity to illuminate the deeper complexities of human-dog interactions.

91

## 92 **Attachment theory**

93         Attachment theory, originally proposed by Bowlby (1982), is a concept from the field of  
 94 developmental psychology that considers the importance of the bond(s) formed with caregiver(s)  
 95 in infancy. Bowlby proposed that the strength of this bond, or attachment, could be measured  
 96 through four relationship elements: proximity seeking, safe haven, secure base and separation  
 97 anxiety (Bowlby, 1982). Strong attachments, formed through supportive relationships, are

98 associated with physical and psychological benefits to individuals (Crawford, Worsham, &  
 99 Swinehart, 2006). The strength of an attachment relationship is typically demonstrated through  
 100 species-specific attachment behaviors, whereby a potentially vulnerable individual seeks to  
 101 maintain proximity to the attachment figure, who is better able to cope with life stressors  
 102 (Bowlby, 1982).

103 Attachment theory provides a list of different attachment types. A positive attachment  
 104 figure should be a sensitive, responsive and consistent caregiver (Field, 2011; Lowenstein,  
 105 2010). For secure attachment, the caregiver responds appropriately, promptly and consistently.  
 106 Conversely, an 'avoidant' attachment caregiver provides little response when confronted with  
 107 distress, and instead encourages independence and exploration. 'Ambivalent' attachment  
 108 caregivers, meanwhile, are inconsistent, and 'disorganized' attachment caregivers are often  
 109 characterized by disoriented behavior, or negativity and withdrawal (Lowenstein, 2010). An  
 110 individual can form relationships with various support providers; however, hierarchical  
 111 preference for caregivers occurs (Field, 2011). This means that when the main attachment figure  
 112 is not responsive, another attachment figure can be sought (Field, 2011).

113 In HAI research, attachment theory has been applied to various types of human-dog  
 114 relationships, including relationships with companion dogs (Mariti, Ricci, Carlone, et al., 2013;  
 115 Topál, Miklósi, Csányi, & Dóka, 1998), assistance dogs (Fallani, Previde, & Valsecchi, 2006,  
 116 2007) and other working dogs (Mariti, Ricci, Carlone, et al., 2013), but with some deviations  
 117 from the original context. Normally, the theory is used to describe a child's level of attachment  
 118 to an adult caregiver (Lowenstein, 2010), however in human-dog studies, attachment has been  
 119 measured bi-directionally, both as a measure of human attachment to dogs, and as a measure of  
 120 dog attachment to humans (Amiot & Bastian, 2015). Demonstrating this dual application, first in  
 121 the context of the owner as 'caregiver', owners have been shown to represent a 'secure base' and



122 'safe haven' for their dogs (Mariti, Ricci, Zilocchi, & Gazzano, 2013). Meanwhile, dogs have  
 123 been shown to demonstrate proximity seeking (Fallani et al., 2006, 2007; Mariti, Ricci, Carlone,  
 124 et al., 2013) and separation anxiety (Mariti, Ricci, Carlone, et al., 2013). Reversing these roles,  
 125 dogs have also been shown to represent a 'safe haven' (Zilcha-Mano, Mikulincer, & Shaver,  
 126 2012) and 'secure base' for an individual human (Kurdek, 2008; Kwong, 2008; Zilcha-Mano et  
 127 al., 2012), with the human also demonstrating proximity seeking behavior (Kurdek, 2008) and  
 128 separation anxiety (Purewal et al., 2017).

129         The dual character of attachment theory, when applied to human-dog relationships  
 130 demonstrates that the theory is adaptable. However, this use of attachment theory, which deviates  
 131 from the original, specific definition of attachment (Crawford et al., 2006), can lead to research  
 132 inconsistencies. For example, a defining quality of 'attachment' involves the subject being better  
 133 able to cope with life stressors (Bowlby, 1982). However, this is difficult to determine if the  
 134 subject is a dog. Also, since many of the HAI studies do not strictly adhere to Bowlby's original  
 135 definition of attachment, it is difficult to determine if their measurements reflect an 'attachment  
 136 relationship' as specifically proposed by Bowlby, or some other sort of strong affectional  
 137 relationship or bond.

138         HAI research also presents deviations from the original theory that are apparent in  
 139 behavioral measures adapted from the Ainsworth Strange Situation Task (Topál et al., 1998) and  
 140 four surveys: Pet Attachment Survey (Holcomb, Williams, & Richards, 1985), Lexington  
 141 Attachment to Pets Scale (T. P. Johnson, Garrity, & Stallones, 1992), Pet Relationship Scale  
 142 (Lago, Kafer, Delaney, & Connell, 1988) and Companion Animal Bonding Scale (Poresky,  
 143 Hendrix, Mosier, & Samuelson, 1987). The scales within these measures have been criticized for  
 144 lack of congruency to all attachment theory components (Crawford et al., 2006). For example,  
 145 proximity seeking measurements have been critiqued for measuring a person's pleasure in

146 physical contact with their dog rather than inquiring about the security experienced during  
 147 physical contact (Crawford et al., 2006). The Pet Attachment Survey, for example, states “you  
 148 like to stroke and touch your pet” (Budge, Spicer, Jones, & George, 1998). Elsewhere, two  
 149 studies using the modified Ainsworth Strange Situation Task have used factor analysis to attempt  
 150 to identify categories of dog responses during the task. These categories included proximity  
 151 seeking, playfulness and fearfulness (Fallani et al., 2006) and anxiety, acceptance and attachment  
 152 (Topál et al., 1998). These clearly differ when compared to the original categories proposed in  
 153 attachment theory, although the dog-human relationship was described as an attachment  
 154 relationship in these publications.

155         These adaptations and deviations potentially limit the integrity of attachment theory when  
 156 applied to HAI research, and this is acknowledged in the existing literature. While some studies  
 157 report that the human-dog relationship can be an attachment relationship (Kruger & Serpell,  
 158 2006), others have argued that conclusive evidence for attachment in dog-human relationships is  
 159 limited (Prato-Previde, Custance, Spiezio, & Sabatini, 2003). In their comprehensive review,  
 160 Crawford et al. (2006) concluded that humans’ attachment to companion animals is variable and  
 161 may not provide any substantial effect.

162

### 163 **Social support**

164         Social support is a multidimensional construct used broadly to denote social relationships  
 165 that promote mental and physical health and well-being (S. Cohen, Underwood, & Gottlieb,  
 166 2000). It is a somewhat general concept, based on the observed link between health and  
 167 wellbeing and socially supportive relationships. Various theories of social support exist, which  
 168 acknowledge this well-established link. However, the multifarious nature of the social support  
 169 construct potentially complicates its application to HAI research.

170           Traditional theories of social support focus on its importance in coping with stress and  
 171   adverse situations. One example is the ‘stress and coping social support theory’, which employs  
 172   the ‘buffering’ hypothesis (S. Cohen et al., 2000), where provision of, or access to, social support  
 173   acts as a buffer to stress, diminishing the effects of stress for people with strong social support  
 174   (S. Cohen & McKay, 1984). This hypothesis proposes two time points where a support provider  
 175   can intervene (S. Cohen & Wills, 1985). The first occurs before the stressful event has been  
 176   recognized as being stressful. The second occurs after the initial experience of the event but  
 177   before the onset of a pathological outcome (S. Cohen & Wills, 1985). Another example, the  
 178   ‘relational regulation theory of social support’, employs the ‘main effects’ hypothesis. This  
 179   theory states that people with high quality social support are healthier overall and therefore,  
 180   suffer less from potentially stressful events to begin with (Lakey & Orehek, 2011).

181           In attempts to make social support more measurable, a typology of support has been  
 182   created, which includes: emotional (nurturance), companionship (sense of belonging),  
 183   instrumental (tangible assistance), and informational (advice) support (S. Cohen et al., 2000;  
 184   Flannery Jr, 1990; B. R. Sarason, Sarason, & Pierce, 1990; I. G. Sarason & Sarason, 1985).  
 185   Other categories have also been proposed, such as directive guidance, nondirective support,  
 186   positive social interaction, and tangible assistance (Barrera Jr & Ainlay, 1983). Due to the lack of  
 187   a unitary theory of social support, and because of the various categories of support proposed,  
 188   there are variations in terminology and inconsistent definitions in the existing literature. This  
 189   causes confusion and impacts on the application of social support in HAI research.

190           Nevertheless, parallels exist between the benefits that supportive human-human  
 191   relationships and supportive human-dog relationships provide. At the very least, there is broad  
 192   consensus that dogs can provide health and wellbeing benefits (Morrison, 2007), the ultimate  
 193   outcome of social support. While null and negative associations between dog ownership and  
 194   these outcomes have been reported (Herzog, 2011; McNicholas et al., 2005), positive reports



195 predominate. Moreover, with respect to the four proposed types of social support described  
 196 above (i.e. emotional, companionship, instrumental, and informational support), research  
 197 demonstrates that dogs are able to fulfil each of these dimensions (Burton, 2016; Wright, 2018).

198 Dogs are frequently reported to provide companionship (Fifield & Forsyth, 1999; Putney,  
 199 2014; Rew, 2000; S. Ryan & Ziebland, 2015) and emotional benefits (Andreassen, Stenvold, &  
 200 Rudmin, 2013; Brooks et al., 2012; Maharaj & Haney, 2014). Some assistance dogs are trained  
 201 to provide instrumental support as well, such as performing functional tasks for a handler with a  
 202 disability (Connolly, 2004; Fairman & Huebner, 2001), and some provide informational  
 203 assistance, such as forewarning a handler of an impending seizure or hypoglycemic episode  
 204 (Dalziel, Uthman, McGorray, & Reep, 2003; Petry, Wagner, Rash, & Hood, 2015). Similarly,  
 205 herding dogs (McConnell & Baylis, 1985) and livestock guarding dogs (Andelt & Hopper, 2000)  
 206 provide instrumental assistance in farming operations, while search and rescue dogs provide  
 207 informational assistance to their handler in locating individuals (Jones, Dashfield, Downend, &  
 208 Otto, 2004). Therefore, where dogs are concerned, the definition of social support can potentially  
 209 include a wide range of effects.

210 Broadly speaking, HAI researchers are comfortable with the characterization of human-  
 211 companion dog relationships as instances of social support (Allen & Blascovich, 1996; Beck &  
 212 Katcher, 2003; Burrows et al., 2008; Lane, McNicholas, & Collis, 1998; McNicholas & Collis,  
 213 2000). Numerous studies have shown that benefits of the human-dog relationship parallel those  
 214 reported from human-human supportive relationships. By proxy, then, it is sometimes assumed  
 215 that dogs provide social support equivalent to that provided by humans. However, the same  
 216 benefits might be underpinned by two different mechanisms, and these remain obscure even in  
 217 relation to the social support provided by humans. It is sometimes proposed that dogs act  
 218 indirectly as social supports, facilitating social support by being a social catalyst for their owner

219 to partake in social interactions with other people (Brooks et al., 2016; R. A. Johnson & Gayer,  
 220 2008; Maharaj & Haney, 2014). Dogs can also be a confidant within themselves, as people have  
 221 described dogs to be substitutes for human social interaction (S. Ryan & Ziebland, 2015).

222 Overall, social support appears to be an effective construct for explaining the benefits  
 223 reported from human-dog relationships. However, while it has been established that social  
 224 support results in better health (Kaplan, Cassel, & Gore, 1977), robust explanations for the  
 225 effects of social support on various health outcomes are difficult to find (Nurullah, 2012). This is  
 226 further complicated by the indirect application or absence of consideration for social support  
 227 theories in the methodology of many studies. HAI researchers have not always applied or  
 228 interpreted social support concepts and definitions faithfully from their original  
 229 conceptualizations; furthermore, the social support construct is sometimes considered a ‘catch-  
 230 all’ for various positive social interactions (Burton, 2016), and therefore lacks specific measures  
 231 of effectiveness.

232

### 233 **Extending Social Support: Thriving through Relationships**

234 To fully understand the benefits which can arise from human-dog relationships, we  
 235 propose moving beyond existing theories to consider possible adjuncts to the theories already  
 236 widely in use in the intraspecific human relationship literature. One example is the Thriving  
 237 Through Relationships (TTR) theory of social support: a relatively new theory proposed by  
 238 Feeney and Collins in 2012, which focuses on the impact supportive relationships have on a  
 239 person’s ability to thrive (B. C. Feeney & Collins, 2012, 2014, 2015a, 2015b). This theory draws  
 240 on other psychological theories, including those described earlier in this paper, but it builds from  
 241 these constructs to identify specific interpersonal processes which permit relationships to support  
 242 and promote thriving (B. C. Feeney & Collins, 2015a).

243           The TTR framework is a theoretical model which holds that thriving - the ability to  
 244 flourish (grow, develop and prosper) and add value to life, behaviorally, emotionally and  
 245 cognitively (O'Leary, 1998) - is promoted through support provided by relationships in specific  
 246 circumstances. Thriving refers to moving beyond a baseline level of functioning, as opposed to  
 247 surviving (functioning below baseline) or recovering (return to baseline) (O'Leary, 1998;  
 248 O'Leary & Ickovics, 1995). Moving from a state of survival or recovery to thriving does not  
 249 involve a direct path with an ultimate endpoint. Instead, thriving is conceptualized as an ongoing  
 250 process of growing and moving forward (Benson & Scales, 2009). This process is dependent on  
 251 numerous factors, which can be framed as contextual (environmental) or personal (individual)  
 252 characteristics (Benson & Scales, 2009; Massey, Cameron, Ouellette, & Fine, 1998). When these  
 253 features align positively, enabling a context-appropriate response to a given situation, a person's  
 254 ability to thrive is likely to increase (Benson & Scales, 2009; Lerner, Lerner, von Eye, Bowers,  
 255 & Lewin-Bizan, 2011; Lerner, von Eye, Lerner, Lewin-Bizan, & Bowers, 2010; Scales, Benson,  
 256 & Roehlkepartain, 2011; Theokas et al., 2005).

257           The psychological concept of thriving has been applied to populations such as  
 258 adolescents (Scales, Benson, Leffert, & Blyth, 2000; Scales et al., 2011) and teachers (Beltman,  
 259 Mansfield, & Price, 2011), but has only recently been considered in relation to HAI research  
 260 (Gravrok, Howell, Bendrups, & Bennett, 2019). In the following text, the TTR theory is applied  
 261 in the context of dog-owner relationships. We focus on four components of the TTR theory: the  
 262 life contexts in which an individual can provide support; qualities of support providers;  
 263 immediate benefits of support; and, long-term benefits of support. Limitations to the TTR theory  
 264 and further considerations for HAI research are also discussed.

265

266

## 267    **Support in different life contexts**

268            The TTR theory emphasizes two circumstances in which a person may receive support to  
 269    thrive. The first circumstance occurs when individuals experience some form of adversity in their  
 270    life, which they may need support to confront and surpass, in order to thrive. This support is  
 271    called ‘Source of Strength’ (SOS) support. The second life circumstance is where individuals are  
 272    not facing adversity, such as in a time of relative prosperity, when support can act as a stimulant  
 273    to enhance their life. This is known as ‘Relational Catalyst’ (RC) support. These two life  
 274    contexts are considered equally important to thriving (B. C. Feeney & Collins, 2012, 2014,  
 275    2015a, 2015b).

276            The TTR theory builds from both social support and attachment theory in the  
 277    conceptualization of the life contexts in which an individual may require support, including times  
 278    of stress and normalcy. In existing human-dog relationship studies that report benefits such as  
 279    decreasing loneliness (Black, 2012; Guest, Collis, & McNicholas, 2006; Rew, 2000; Rhoades,  
 280    Winetrobe, & Rice, 2015), increasing positive interactions from strangers (Brooks et al., 2012;  
 281    Brooks et al., 2016; Hart, Hart, & Bergin, 1987; Valentine et al., 1993; Van Houtte & Jarvis,  
 282    1995) and companionship (Fifield & Forsyth, 1999; Putney, 2014; S. Ryan & Ziebland, 2015),  
 283    there is little mention of life circumstance, and it is assumed that life circumstance has not been  
 284    considered in the research design. Meanwhile, in experimental studies of adversity (such as  
 285    giving a speech or doing a mathematical task out loud), dogs have been reported to provide  
 286    benefits such as decreasing perceived and/or physiologically experienced stress (Beetz et al.,  
 287    2011). This has even been shown to occur more effectively than with human support (Allen,  
 288    Blascovich, Tomaka, & Kelsey, 1991). Such examples suggest that there could be an untapped  
 289    layer of contextual understanding that TTR theory is able to address.



290           Although companion dog relationships are usually not initiated for the purposes of  
 291 obtaining additional assistance in times of adversity, some human-dog relationships, those  
 292 involving specially trained assistance or therapy dogs, are. Therefore, understanding these  
 293 differences in circumstances may be important in HAI research. Another factor to consider with  
 294 assistance dogs is that some studies have found that, in addition to their trained roles, they  
 295 provide specific support to their handlers in times of adversity, for which they have not been  
 296 trained. This includes providing emotional comfort (Taylor, Edwards, & Pooley, 2013) and  
 297 helping to regulate emotions in stressful situations (Love & Esnayra, 2009; Yount, Ritchie,  
 298 Laurent, Chumley, & Olmert, 2013).

299

#### 300 **Qualities of support providers**

301           The idea that more than one individual can provide support is widely acknowledged.  
 302 Attachment theory researchers, for example, postulate that each recipient has a hierarchy of  
 303 attachment figures. Studies employing the TTR theory, and social support more generally,  
 304 postulate that many individuals with appropriate qualities, abilities or characteristics can provide  
 305 support (B. C. Feeney & Collins, 2012, 2015b; Lakey & Cohen, 2000), and that the quality of the  
 306 relationship these individuals have with their support providers (or attachment figures) is  
 307 influential in the quality of support that they will receive. A support provider who is responsive  
 308 and can provide appropriate support is perceived to be the most beneficial.

309           Studies using attachment theory commonly evaluate the traits of a recipient rather than  
 310 emphasizing qualities of support providers (Lowenstein, 2010). In contrast, social support  
 311 theories and the TTR theory postulate that a situation can directly impact the type of support that  
 312 should be provided (S. Cohen & Wills, 1985; B. C. Feeney & Collins, 2012). Hence, the support  
 313 provider needs to have a well-functioning, close relationship with the recipient to provide

314 sensitive and responsive support (B. C. Feeney & Collins, 2001). The TTR theory emphasizes  
 315 the importance of understanding ‘provider qualities’ to offer the correct type of support for each  
 316 life circumstance (B. C. Feeney & Collins, 2012). SOS support has been described as providing a  
 317 safe haven, fortification, assisting in the reconstruction process and assisting to reframe/redefine  
 318 adversity as a mechanism for positive change. Meanwhile, RC support should create  
 319 opportunities for growth, provide assistance in viewing life opportunities, facilitate preparation  
 320 for engagement in life opportunities and assist with implementation (B. C. Feeney & Collins,  
 321 2015b).

322         In the HAI research context, the ‘qualities of support’ given by non-human support  
 323 providers are difficult to assess. However, the support provided by dogs could be framed through  
 324 the qualities proposed in the TTR theory. HAI research recounts that some individuals have  
 325 reported dogs to be their most important relationship (Lane et al., 1998), implying that they are  
 326 close and well-functioning. Additionally, dogs are known to provide very responsive support to  
 327 their handler. Assistance dogs, for example, have been reported to notice changes indicating an  
 328 impending panic attack or psychotic episode (Esnayra & Love, 2012), and can potentially be  
 329 more responsive than human supports are able to be. Dogs, and especially assistance dogs, have  
 330 also been praised for their ability to assist their handler to re-evaluate their perception of  
 331 adversity, which acts as a mechanism for positive change. Perceived support from assistance  
 332 dogs, for example, may allow their handler to feel in control of their life (Fairman & Huebner,  
 333 2001; Ng, James, & McDonald, 2000) as they are able to provide support without overwhelming  
 334 the individual or making them feel helpless (Sanders, 2000). In other studies, support provided  
 335 by assistance dogs has been reported to include fostering feelings of independence (Plowman,  
 336 Bowan, & Williams, 2009; Vincent et al., 2015) and self-confidence (Herlache-Pretzer et al.,  
 337 2017). These findings indicate that dogs may possess the necessary qualities to be considered  
 338 ‘support providers’ for their handlers.

### 339    **Immediate benefits of support**

340            The TTR theory proposes that any immediate benefits experienced by the recipient  
 341    indicate that the support provided was responsive and appropriate to the life context (B. C.  
 342    Feeney & Collins, 2012). These ‘immediate benefits’ are conceptualized as mechanisms to  
 343    encourage long term thriving and are important to better understand how a person can thrive  
 344    through the assistance of a support provider (B. C. Feeney & Collins, 2015a). The indicators of  
 345    thriving include immediate and positive changes in: emotional state; self-evaluations and self-  
 346    perceptions; appraisals of the situation or event; motivational state; situation relevant behaviors  
 347    or outcomes; relational outcomes; neural activation and physiological functioning; and lifestyle  
 348    behaviors (B. C. Feeney & Collins, 2015a, 2015b). Each of these outcomes apply to both SOS  
 349    and RC support, however, they may present slightly differently in each context. They are also  
 350    expected to occur just before and may overlap the long-term core thriving outcomes, but are  
 351    conceptualized to make independent contributions toward long-term thriving (B. C. Feeney &  
 352    Collins, 2014). For example, learning to perceive an event as challenging instead of stressful, can  
 353    over time lead to thriving, as the individual’s emotional state may be less negative and appraisal  
 354    of the event more positive. However, these are immediate indicators because one instance of  
 355    these changes would not indicate that the person is thriving, but rather a collection of these could  
 356    contribute to the individual experiencing global thriving (B. C. Feeney & Collins, 2015a).

357            The social support construct outlines four categories of support an individual could  
 358    provide/receive: emotional, informational, companionship and instrumental support (S. Cohen et  
 359    al., 2000; B. R. Sarason et al., 1990; I. G. Sarason & Sarason, 1985). These outcomes are  
 360    considered to be conceptually different but are not experientially independent (S. Cohen & Wills,  
 361    1985), although specific mechanisms have been suggested. It is well established that dogs are  
 362    able to provide support within all four social support categories, and that people often feel safe

363 (Fifield & Forsyth, 1999; Rew, 2000) and secure (Brooks et al., 2012) in the presence of their  
 364 dog, as attachment theory proposes. There is also reason to believe that dogs provide other  
 365 benefits, which reflect the eight ‘immediate benefits’ proposed in the TTR theory. Changes in  
 366 emotional states (Brooks et al., 2016), such as a decrease in negative emotions such as anxiety  
 367 (Andreassen et al., 2013) or stress (Kertes et al., 2017), have been commonly reported in dog  
 368 studies. Individuals also perceive themselves to be more self-confident (Fifield & Forsyth, 1999;  
 369 Paul & Serpell, 1996; Plowman et al., 2009; Van Houtte & Jarvis, 1995), and report that their  
 370 dog makes the day easier (Andreassen et al., 2013). Commonly, dog owners report experiencing  
 371 more motivation, such as to get out of bed (Brooks et al., 2016) or to interact with the  
 372 community (Maharaj & Haney, 2014). Assistance dogs especially facilitate increases in situation  
 373 relevant behaviors or outcomes by increasing their handler’s ability to cope with, for example, a  
 374 disability (Fairman & Huebner, 2001; Krause-Parello, Sami, & Padden, 2016). Owners also  
 375 perceive more positive relational outcomes, such as feelings of acceptance (Brooks et al., 2016;  
 376 Putney, 2014).

377         In regard to neural activation and physiological functioning, owners have reported being  
 378 more focused (Davis, Nattrass, O'Brien, Patronek, & MacCollin, 2004), less distracted by mental  
 379 health concerns (Andreassen et al., 2013; Brooks et al., 2016), and have better overall health,  
 380 especially from the exercise they receive because of their dog (Andreassen et al., 2013;  
 381 Whitmarsh, 2005). Lifestyle behaviors have also been reported to change after acquiring a dog,  
 382 such as increasing responsibility (Maharaj & Haney, 2014; Putney, 2014) or (re)entering the  
 383 workforce, for individuals with assistance dogs (Fairman & Huebner, 2001; Herlache-Pretzer et  
 384 al., 2017). The TTR theory therefore provides a more comprehensive and nuanced understanding  
 385 of the impact of the support provided.

386



### 387 Long-term benefits of support

388       The immediate benefits or changes resulting from provisions of social support can lead to  
 389 long-term benefits as well. Improved wellbeing is perceived to be the ultimate long-term  
 390 outcome in much of the social support literature (S. Cohen & Wills, 1985). In the TTR theory,  
 391 thriving is the ultimate outcome of receiving support (B. C. Feeney & Collins, 2015a); this is  
 392 described similarly to wellbeing, and divided into the categories of hedonic, eudemonic,  
 393 psychological, social, and physical wellbeing (B. C. Feeney & Collins, 2015a, 2015b). These  
 394 terms are commonly used within research, but not necessarily together (Hanson Frost et al.,  
 395 2000; McKee-Ryan, Song, Wanberg, & Kinicki, 2005; R. M. Ryan & Deci, 2001), and wellbeing  
 396 can be measured in multiple different ways (Hills & Argyle, 2002; Kahneman & Krueger, 2006).  
 397 This complicates comparisons between the constructs. Attachment theory does not use wellbeing  
 398 as the ultimate outcome of an attachment relationship, although the positive emotions and  
 399 behavioral development that are associated with secure attachment are likely closely related to  
 400 wellbeing (Lowenstein, 2010).

401       Recent descriptions of the TTR theory state that it includes five components of wellbeing  
 402 (B. C. Feeney & Collins, 2015a, 2015b). However, Feeney and Collins (2012 and 2014)  
 403 previously proposed ten indicators of long-term thriving: development of skills/talents, discovery  
 404 of self and life purpose, accumulation of wisdom, development of core strength, positive view of  
 405 oneself, positive view of others, movement toward full potential, relationship growth and  
 406 prosperity, psychological health, and physical health. These long-term indicators are not  
 407 independent of each other, but are acknowledged to be interrelated and to affect/influence each  
 408 other (B. C. Feeney & Collins, 2014). The components are also additive, such that the more  
 409 indicators a person displays, the more they are considered to be thriving (B. C. Feeney & Collins,  
 410 2014). The recognition that there are multiple aspects to thriving provides the TTR theory with

411 scope to emphasize each benefit and to ascertain their relative effects on a person's overall life  
412 and ability to thrive.

413         The long-term benefits of human-animal relationships have been studied in HAI research,  
414 especially with dogs. Dog owners commonly report increases in positive emotions (Davis et al.,  
415 2004; R. A. Johnson & Gayer, 2008) and positive behavioral development (Butterly et al., 2013).  
416 This would be expected, as dogs provide all the components to develop an attachment bond with  
417 their handler. Regarding social support, handlers have noted that dogs have increased their  
418 general well-being (Burrows et al., 2008; Collins et al., 2006; Putney, 2014). Based on HAI  
419 research it would be expected that other TTR long-term outcomes would be supported as well.  
420 The long-term outcomes of thriving have recently been investigated in HAI research regarding  
421 companion and assistance dogs. This original application of the TTR theory to dogs, using the  
422 ten indicators of long-term thriving, demonstrated that assistance dog handlers and companion  
423 dog owners perceived their dog to assist them to thrive in relation to all ten indicators of thriving  
424 (Gravrok et al., 2019). These more descriptive indicators may therefore provide greater  
425 understanding of how the support from an animal can impact a person's ability to thrive and  
426 should be considered further.

427

#### 428 **Strengths of the TTR theory**

429         As should be clear from the preceding discussion, the TTR theory adds to existing  
430 theoretical frameworks used in human-dog relationship research in several ways. First, it allows  
431 researchers to focus on support in different life contexts, especially by promoting the value of  
432 support in times of normalcy. Support in times of adversity is most commonly explored in the  
433 prevailing constructs. This shift in perspective, from adversity to normalcy, is an important  
434 contribution because adversity does not define life for many people, and even if adversity occurs,

435 it can often be overcome (Linley & Joseph, 2004). Hence the TTR theory enlarges the scope of  
436 existing theories, potentially explaining the benefits of companion dogs for people whose lives  
437 are not characterized by ongoing adversity.

438         Additionally, the TTR theory postulates that if the qualities of the support provider match  
439 the support needed, these qualities will assist individuals to respond in such a way that they  
440 emerge from the situation more capable than they were before (B. C. Feeney & Collins, 2015b).  
441 This is an important enhancement to the social support construct, which focuses on the  
442 individual's context rather than the qualities of the support provider. Similarly, a hierarchy of  
443 support providers, as used in attachment theory, is not necessary, because any individual with the  
444 appropriate qualities could provide support.

445         Lastly, the TTR theory moves beyond the explanatory scope of the other commonly used  
446 constructs in HAI research, by providing more nuanced outcome measures. This potentially  
447 enables a more comprehensive understanding of the implications of the support provided,  
448 including the benefits a person will receive both immediately and long-term, emphasizing the  
449 temporal contribution of support. These outcome measures add to the wellbeing measures  
450 currently in use.

451

#### 452                   **Limitations of the Thriving Through Relationships theory**

453         The major limitation with the TTR theory is that it is relatively new and has not been  
454 tested experimentally. This should be taken into consideration, but the theory should not be  
455 discarded due to a lack of experimental support. Rather, it should be tested so that its usefulness  
456 can be ascertained. Other limitations identified include a lack of consistency in the terminology  
457 used in the four seminal publications (B. C. Feeney & Collins, 2012, 2014, 2015a, 2015b) that

outline the immediate and long-term outcome measures of thriving. The theory's founders shifted from a model of 10 to one of 5 indicators of thriving without explanation in the initial development of their work. They also adjusted the terminology for the immediate outcomes of thriving (the most current terminology is presented here). Feeney and Collins did not provide strict definitions of the eight immediate changes that can occur in the recipient nor the ten long-term indicators of thriving. Rather, they list qualities and characteristics indicative of each category. This may be beneficial in that there is no need to translate the definitions into human-animal terms. Also, since the theory proposes that the long-term indicators of thriving overlap each other, it may be less important to have clear definitions. These limitations, however, should be addressed in future research aiming to test the applicability of the TTR theory in HAI research.

469

#### 470 **Implications and future directions**

471 The TTR theory is comparable to other constructs currently used in HAI research but  
472 provides a more comprehensive foundation to understand the potential benefits of social support.  
473 Thus, it may offer a new theoretical approach for explaining the perceived benefits that dogs are  
474 reported to provide. Additionally, this theory should not be limited to human-dog interactions.  
475 As human-dog relationships are commonly studied (Barker & Wolen, 2008), this provided the  
476 best foundation in which to initially explore human-animal interactions application to this theory.  
477 However, it is believed that the application of this theory could be expanded to other types of  
478 human-animal relationships, especially those that are perceived to be close and positive.

479 Future research should not limit itself to the constructs discussed therein. Increases in  
480 well-being are widely reported in HAI research, and there are many other theories in other fields  
481 that utilize well-being as an outcome measure. For example, Keyes (2002) proposes that

482 physical, psychological and social well-being can be used to indicate flourishing, which is a  
483 similar concept to thriving and is often used in the definition of thriving. Such parallel constructs  
484 deserve further consideration. As a starting point, however, the TTR theory provides a good  
485 foundation to explore HAI concepts further.

486

## 487 **Conclusion**

488 The current paper presented a brief introduction to attachment theory, social support and  
489 the biophilia hypothesis as they relate to HAI research examining dog-human relationships. It  
490 was identified that none of these constructs sufficiently explain the benefits that human-animal  
491 relationships provide, and that the Thriving Through Relationships (TTR) theory may be useful  
492 in this context. Our analysis suggests that the TTR theory enhances the existing foundation to  
493 equip researchers to understand the impact of human-dog relationships. The inclusion of multiple  
494 contexts, along with the detailed articulation of the different types of support provided and  
495 multiple indicators of thriving in both short and longer terms, enhances application of the TTR  
496 theory. As the scope of HAI research increases, a more robust theory may emerge from the  
497 concepts presented here. Currently, however, the TTR theory appears to be a valid and  
498 applicable psychological theory to enhance understanding of human-animal relationships.

499

## 500 **Conflict of Interest**

501 The authors report no conflict of interest.

502



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### **2.3 Further discussion**

The presented paper applied and compared the TTR theory to the most prevalent constructs used in HAI and specifically the human-dog relationship literature. Overall, the paper demonstrated that the TTR theory appeared to be a viable adjunct to attachment theory and social support. When applied further, this theory will potentially reveal great insight to enhance the understanding of human-dog relationships. Although this theory has never been applied to this domain, there is potential for the application to extend from human-dog relationships to human-AD relationships. To understand this better, thriving will be discussed more generally and applied to the disability and AD contexts.

### **2.4 Thriving**

Thriving is a multidimensional psychological construct, that can be influenced by societal, environmental and personal life circumstances (Abraído-Lanza, Guier, & Colón, 1998; Epel et al., 1998). Due to this variability, thriving is often operationalized and defined based on the context investigated. Typically this involves two domains: development, such as positive youth development (Lerner, Dowling, & Anderson, 2003; Lerner, Lerner, von Eye, Bowers, & Lewin-Bizan, 2011) and performance, such as in work contexts (Porath, Spreitzer, Gibson, & Garnett, 2012; Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). From these different domains, divergent ideas have emerged of what thriving is, its components and whether thriving is a specific or global construct (Brown et al., 2017). Within the context of this thesis, thriving is a global construct.

Many similar concepts obscure the thriving literature, including resilience, growth and flourishing. Resilience is often treated similarly to thriving (Carver, 1998), but is different as it represents maintenance in functioning and is typically demonstrated after a

stressful event (Bonanno, 2004). Growth, stress-related growth and posttraumatic growth all refer to having the capacity for positive adaptation contributing to an elevated level of functioning (Brown et al., 2017), primarily occurring after adverse events (Volgin & Bates, 2016). Thriving, however, exceeds this maintenance objective or positive adaptation and can occur in times of normalcy (Feeney & Collins, 2015b). These terms are essential to differentiate as resilience and propensity for growth may be two personal factors that contribute to (but differ from) an individual's ability to thrive.

Flourishing is perhaps the most similar construct and difficult to distinguish from thriving. Attempts have been made to differentiate the two (see: Benson & Scales, 2009; Spreitzer et al., 2005), but this is complicated by the specific, yet inconsistent criteria researchers have used to measure each (Brown et al., 2017). Flourishing, for example, does not consider an individual's performance, which has been considered necessary to thrive (Brown et al., 2017). Due to the conceptual differences in thriving based on the context investigated and the similarity to other constructs, it is crucial to outline thriving as it relates to the disability and AD contexts.

#### ***2.4.1 Disability context***

The disability context rarely discusses thriving as a psychological construct. When considered, thriving has been investigated in both the development (Weiss & Riosa, 2015) and performance (Zhu, Law, Sun, & Yang, 2019) domains emphasized in thriving literature (Brown et al., 2017). Brown et al.'s (2017) description of thriving specifies that a person who is thriving experiences a subjective "high-level" of performance and wellbeing. Within the disability context, a "high-level" could perhaps best be conceptualized as being 'higher' than a previous level. This interpretation is more

appropriate for this demographic as it is often assumed that people with disabilities do not experience the same level of performance or wellbeing as people without disabilities (Albrecht & Devlieger, 1999). Therefore, thriving reflects an increase in an individual's level of performance and wellbeing from a previous state or experience.

Additionally, life circumstances that influence thriving are essential to understand within the disability context. Societal, environmental or personal life circumstances may contribute positively or negatively to an individual's perception of their ability to recover, survive or thrive with a disability (O'Leary & Ickovics, 1995). The contribution of favorable life circumstances above that of unfavorable life circumstances will also contribute to an individual's perception of thriving.

For people with disabilities, many life circumstances such as societal and environmental factors appear negative and contribute to challenges that people with disabilities experience (O'Byrne & Muldoon, 2017). For example, the World Health Organization recognized that some people with disabilities rely on others to support and advocate for their goals, making them particularly vulnerable to deficiencies in services (World Health Organization, 2011). Similarly, formal and informal forms of social support do not always work together, potentially hindering health outcomes for people with disabilities (Varda & Talmi, 2018). A lack of reliable and appropriate support potentially hinders their ability to thrive.

Other factors, such as resilience and growth, contribute more positively to thriving (Weiss & Riosa, 2015) and are important to increase function for people with disabilities (Alschuler, Kratz, & Ehde, 2016; Runswick-Cole & Goodley, 2013; Wang et al., 2017). Appropriate and effective social support is also vital (Richmond, Ross, &



Egeland, 2007) and can contribute to people with disabilities' ability to thrive (Feeney & Collins, 2015a, 2015b). The application of these constructs will be discussed throughout the thesis.

#### ***2.4.2 Assistance Dog context***

Researchers within the AD context have never applied thriving as a psychological construct to this research area. Based on the definition of thriving provided, ADs appear to provide support which could assist a person to thrive through increasing the perceived level of performance and wellbeing. ADs' abilities often contribute to increasing performance for an individual by minimizing the adverse effects of a disability through trained behavior (Hanebrink & Dillon, 2000). This includes guiding their handler around obstacles (Naderi, Miklósi, Dóka, & Csányi, 2001) or picking up objects (Connolly, 2004). This trained ability should increase their performance by enabling them to do things that they previously could not, like going places independently (Sanders, 2000), and performing activities of daily living (Connolly, 2004), which would ultimately increase an AD handlers' ability to thrive.

Additionally, ADs increase many forms of personal development for their handler, leading to improved wellbeing. These include: feeling safer (Burrows, Adams, & Spiers, 2008; Esnayra & Love, 2012) and more confident (Plowman et al., 2009; Yount, Ritchie, Laurent, Chumley, & Olmert, 2013), while also increasing responsibility (Camp, 2001; Lessard et al., 2018). Importantly, ADs are also known to increase the handler's self-esteem (Allen & Blascovich, 1996; Camp, 2001; Connolly, 2004) and positive affect (Davis, Nattrass, O'Brien, Patronek, & MacCollin, 2004; Kirton et al., 2008), both have been shown to have a direct effect on thriving (Abraído-Lanza et al., 1998).

Consequently, handlers often report, and researchers often conclude that ADs enhance a handler's wellbeing (Collins et al., 2006; Plowman et al., 2009).

## 2.5 Summary

The aim in this chapter was to provide a theoretical framework and context for the subsequent studies contained in this thesis. As such, this chapter demonstrated that thriving and the TTR theory appeared viable to facilitate the understanding of HAI research more broadly and the human-AD relationship specifically. Therefore, the TTR theory will be applied to the investigation of this phenomena further. The next step is to answer question one, *do AD handlers perceive that their dog assists them to thrive?*

## **CHAPTER 3: Do people perceive that their dog assists them to thrive?**

As identified in Chapter 2, a review of the available literature suggested that application of the TTR theory to the HAI literature was promising to understand the benefits provided through human-animal relationships, especially human-dog relationships and particularly those that form between ADs and their handlers. Compared to other commonly used theories, the TTR theory seems likely to offer additional insights into these relationships. This provided a strong rationale to further explore the applicability of the TTR theory to human-dog relationships.

As thriving is subjective (Brown et al., 2017), it is appropriate to begin this investigation by determining whether people (handlers and owners) perceive that their dog assists them to thrive, the primary aim in this chapter. Both populations were included as the literature presented in Chapter 2 allowed for speculation that the TTR theory would provide valuable information regarding both populations. To accomplish this, quantitative methods were employed to examine whether CD owners perceived that their dog assisted them to thrive and whether AD handlers perceived similar or even more pronounced effects.

To achieve the aims described above, a survey was developed using the TTR theory's ten components of long-term thriving as a basis for question generation. Perceptions of 530 AD handlers and CD owners were explored regarding whether they perceived that their dog assisted them to thrive. These findings were published in *Disability and Rehabilitation: Assistive Technology* in January 2019 with the paper titled

“Thriving Through Relationships: Assistance dogs’ and companion dogs’ perceived ability to contribute to thriving in individuals with and without a disability.” The published paper framed the research questions slightly differently than was presented above, with more attention paid to comparisons between the benefits perceived from CDs versus ADs. Given the expense associated with the procurement of an AD, there was a general interest in the community in whether these dogs were more beneficial for their handlers than CDs. Therefore, it was further hypothesized that AD handlers would perceive that their dog assisted them to thrive more strongly than CD owners because ADs are specially trained to assist their handlers in various ways.

**3.1 Paper 2: Thriving through relationships: assistance dogs' and companion dogs' perceived ability to contribute to thriving in individuals with and without a disability**

Gravrok, J., Howell, T., Bendrups, D., & Bennett, P. (2018). Thriving through relationships: assistance dogs' and companion dogs' perceived ability to contribute to thriving in individuals with and without a disability. *Disability and Rehabilitation: Assistive Technology*, 1-8. DOI 10.1080/17483107.2018.1513574



ORIGINAL RESEARCH



## Thriving through relationships: assistance dogs' and companion dogs' perceived ability to contribute to thriving in individuals with and without a disability

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### ABSTRACT

**Purpose:** Companion dogs can provide psychosocial benefits for their owners. Assistance dogs reportedly provide similar benefits, while also performing specific tasks. These psychosocial benefits may increase their handler's quality of life and ability to thrive – defined as having the ability to grow and flourish, especially in the face of adversity. Currently, no studies compare assistance dogs' effectiveness to companion dogs' in assisting their handler/owner to thrive, an important comparison given that companion dogs are typically less expensive to acquire, and more readily available.

**Methods:** The Thriving Through Relationships (TTR) theory was used to inform the development of a human-dog relationship survey, which was distributed through assistance dog organizations and to the general public.

**Results:** Participants were divided into three groups: persons with a disability who had an assistance dog ( $n = 165$ ), persons with a disability who had a companion dog ( $n = 249$ ) and persons with no disability who had a companion dog ( $n = 198$ ). Perceived overall support was statistically different between the three groups,  $F(2, 394) = 14.45, p < .001$ . Assistance dog handlers reported receiving significantly higher levels of support than companion dog owners with disabilities ( $p < .01$ ) or without disabilities ( $p < .001$ ). In fact, assistance dogs were reported to provide more support ( $p < .017$ ) than companion dogs on nine out of ten separate indicators of thriving.

**Conclusion:** Overall, dogs are perceived to provide support that improves their handler/owner's ability to thrive. Most importantly, however, assistance dogs may provide greater support than companion dogs for persons with a disability and, therefore, may be worth the additional time and financial cost.

### ► IMPLICATIONS FOR REHABILITATION

- Assistance dogs could assist rehabilitation by improving coping skills, especially during times of adversity, as demonstrated through the ten indicators of thriving.
- Assistance dogs and companion dogs are not inter-changeable when it comes to providing support for individuals with a disability.

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 relationship

### Introduction

One of the core functions of disability support agencies worldwide is to provide appropriate resources to assist their clients to live life to the best of their ability. One form of assistance that is increasing in popularity for people with disabilities is assistance dogs [1]. Assistance dogs are trained to perform tasks which assist with their handler's specific physical, psychological, or intellectual disability [2]. This may include picking up dropped items for people with mobility impairment [3], alerting to hypoglycaemia for people with diabetes [4] or providing deep pressure therapy for people with sensory impairment [5,6]. In addition, due to the strong relationship that many humans have with dogs [7], assistance dogs may also act as support providers in other ways, enabling their handlers or owners to experience emotional and psychological benefits. These additional supports include providing a sense of independence and confidence to their handler [8] as well as facilitating social interactions [9].

Although assistance dogs are known to provide many types of benefits, they can be difficult to acquire due to constraints within the assistance dog provider organizations. For instance, organizations are constrained by the number of trainers they can employ and consequently, the number of dogs that can be trained. Failure rates of dogs moving through training, which have historically been reported to be about 50% [10], also impact the availability of assistance dogs. These constraints lead to high financial costs associated with acquiring an assistance dog, which can be in excess of USD \$40,000 [11]. All of this contributes to high wait times for a person with a disability to acquire a assistance dog, and has led some potential assistance dog handlers to explore other options (e.g., training their own dog [12,13], obtaining a "assistance dog" vest online for a pet dog that has been given no training at all [14,15]).

While some tasks that assistance dogs perform can be achieved through other means (e.g., regular blood glucose

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Supplemental data for this article can be accessed [here](#).

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monitoring to avoid a hypoglycaemic episode), these other “tools” are unlikely to have similar psychosocial effects. It is known however, that, like assistance dogs, companion dogs also provide many benefits to their owners in physical, psychological and social domains [16]. Hence, even though companion dogs are not specifically trained to provide particular types of support for their owner, they may similarly enhance their owner’s life. If so, persons with disabilities might be well advised to acquire a suitable companion dog if they are unable to afford or qualify for assistance dog support. For some people with disabilities, the support provided by a companion dog may be sufficient to meet many of their needs.

The psychological concept of thriving, defined as having the ability to grow and add value to one’s life, behaviourally, emotionally and cognitively, even in the face of adversity [17], may be useful in this context since thriving is associated with enhanced well-being and life satisfaction [18]. Dogs have been reported to enhance the quality of life [19–21] and to fulfil the qualifications of providing a supportive relationship [22]. Appropriate and responsive support provided by such relationships can assist an individual to thrive [23]. According to the Thriving Through Relationships theory, which emphasizes the impact that positive supportive relationships have on a person’s ability to thrive [24], a supportive other could assist an individual to thrive both in times of adversity, called Source of Strength (SOS) support, and in times of relative normalcy, called Relational Catalyst (RC) support [23]. The TTR theory also outlines ten contributors to thriving: development of skills/talents, discovery of self and life purpose, accumulation of wisdom, development of core strength, positive view of oneself, positive view of others, movement toward full potential, relationship growth/prosperity, psychological health, and physical health [25].

The TTR theory was used to develop a questionnaire to investigate differences between companion dogs’ and assistance dogs’ ability to assist their owner/handler to thrive. Companion dog owners without a disability were also included to provide a reference point against which the main samples could be compared.

## Methods

This project received approval from the La Trobe University Human Research Ethics Committee (approval number HEC 17–053).

### Participants

Companion dog owners and assistance dog handlers who were at least 18 years of age and fluent in English were invited to complete the survey. A total of 704 surveys were collected from eligible participants over three months between July and September 2017, with 530 being completed, resulting in a 75.3% completion rate. The vast majority of respondents were female (89.6%), and ages ranged from 18 to 87 years ( $M = 44.17$  years,  $SD = 14.95$ ). The greatest proportion of participants were from Australia/New Zealand (66.98%); North America (28.02%) was also well-represented, and a few participants were from Europe (2.92%).

### Materials

The Thriving Through Relationships with Dogs Survey (TTRDS) was developed based on the Thriving Through Relationships (TTR) literature (full survey provided in the [Supplementary Material](#)

[23–26]. Prior to distribution, the survey was reviewed by social research experts with knowledge of the theoretical framework being examined and extensive experience developing surveys for dog owners. Each item was discussed and revised as necessary. Each participant was asked to respond to the survey about their current dog. If they had more than one, they were asked to respond about the dog they felt most bonded to. The survey contained six sections. [Supplementary Material Section 1](#) involved four general questions about their dog (e.g., breed, whether it was an assistance dog or companion dog).

[Supplementary Material Section 2](#) consisted of six questions. Five measured the perceived quality of the human-dog relationship, including the degree to which the participant trusted their dog, and the extent to which they believed that: their dog helped them to thrive; their dog shared their joys and sorrows; their dog was there for them in times of need; their dog’s life overlapped with their own. These were presented on a five-point Likert scale, with higher scores indicating a higher perceived quality of the relationship. The sixth question asked whether the participant was the primary caregiver for the dog.

[Supplementary Material Section 3](#) included 73 questions, consisting of 40 questions specific to the 10 indicators of thriving (four questions per indicator: two related to SOS support and two relating to RC support), and 30 general support questions. Three extreme questions were added to make sure people were not providing the highest response option to every question (i.e., “my dog and I have absolutely everything in common”, “my dog believes in my dreams”, and “my dog helps me to think positively every moment of the day”). A seven-point Likert response scale was used for the potential to observe more variability in scores, with higher scores indicating higher perceived support.

[Supplementary Material Section 4](#) measured two life status variables, satisfaction with life (SWL) and current perceived difficulties (CPD). The Satisfaction with Life Scale [27] consisted of five questions presented on a Likert scale from 1 to 5, with higher scores indicating a higher satisfaction with their life. The other life status variable comprised one question asking about CPD: “compared to normal, life for you at the moment is” on a seven-point Likert scale from extremely easy to extremely difficult, with a higher score indicating more perceived difficulties.

[Supplementary Material Section 5](#) involved one open response question, “What specifically does your dog do to help you thrive?” The definition of thriving provided to participants was “having the ability to grow and flourish, especially in the face of adversity”. [Supplementary Material Section 6](#) concluded the survey with six questions requesting demographic information (e.g., year of birth, number and types of disabilities).

The survey was distributed using Qualtrics, an online survey platform. To accommodate people with vision impairment, questions were limited to Likert scales, open-ended responses and multiple-choice questions. Four participants, all with vision impairment, chose to complete the survey by phone.

### Procedure

Participants were recruited via the snowball method. Initially the survey link was sent to 136 assistance dog organizations around the world, whose contact information is available to the public online. These organizations were asked to distribute information about the survey to their clients via email. These participants were then requested to send the link to other people that may be interested in participating, and who fit the criteria. As the survey was not limited to people with assistance dogs, we also



posted the survey on social media groups that target companion dog owners, to increase the response rate for this demographic.

#### Data preparation

Among the 197 individuals who selected the highest response option for any of the three extreme questions, we examined their responses to other items to determine whether they appeared to be completing the survey without due consideration. In these cases, there was sufficient variability in the other responses that the extreme items were deemed to be legitimate, and the data were not excluded.

A reliability analysis was conducted on the five questions in [Supplementary Material Section 2](#) relating to the handler's perceived relationship with their dog, which demonstrated an acceptable Cronbach's alpha of 0.715 [28]. Subsequently, these questions were averaged to create a perceived relationship score out of 5.

The support questions in [Supplementary Material Section 3](#) were analyzed in groups. We calculated averages for overall support perceived from all 70 support questions. We also individually calculated average scores for both SOS support and RC support from the 20 questions related to each type of support. We intended to explore differences between SOS and RC support; however, analyses revealed a very high correlation (i.e.,  $r$  value above 0.9) between these types of support, leading us to believe there may not be a substantive difference between SOS and RC support questions in this survey. This was also observed when overall support items not included in SOS or RC support were correlated with SOS and RC support types. Therefore, to maintain validity in regard to the TTR theory, only overall support was used in further analyses.

A reliability analysis was performed on the four questions designed to assess each of the ten TTR indicators. Cronbach's alpha ranged from 0.685 to 0.864, demonstrating fair to good internal consistency [28]. The four questions corresponding to each indicator of thriving were therefore averaged to create a score for each indicator out of 7. [Supplementary Material Section 4](#) total SWL scores were calculated by summing scores across the five validated questions, as recommended by the authors [27]. The perception of CPD was kept on the seven-point Likert scale.

#### Statistical analyses

Statistical analyses were conducted using IBM SPSS Statistics Version 23 (Armonk, NY). For some analyses, the sample was divided into three groups: assistance dog handlers with a disability, companion dog owners with a disability, and companion dog owners who had not experienced a disability since owning their dog. Parametric statistics were used throughout the study as the sample size was large and the tests robust enough to withstand violations of normality [29].

An independent samples  $t$ -test was used to determine if there was a difference in number of disabilities experienced between the two groups who experienced disabilities. To determine if there were differences between groups on age of participants or perceived relationship with their dog, a one-way between groups ANOVA and Tukey's HSD *post-hoc* tests were used. An ANCOVA was performed to determine the influence that age or number of disabilities had on the overall support that participants perceived their dog to provide.

A one-way between groups ANOVA was used to measure differences between the three groups on life status variables (SWL and CPD). Pearson's correlations were used to measure relationships between overall support and the two life status variables. A partial correlation was performed to determine the influence that type of dog had on the relationship between CPD and overall support among participants with a disability. One-way between groups ANOVA's with Tukey's HSD *post-hoc* tests were used to determine differences between the three groups on overall support and the 10 indicators of thriving. Bonferroni corrections were used (0.05/10 comparisons = 0.005 significance level) to account for the ten components of thriving, due to their conceptual similarity.

The open-ended question in [Supplementary Material Section 5](#) was analyzed using QSR International's NVivo 10 qualitative analysis software (Melbourne, Australia). The qualitative data were reviewed and initial codes created with inductive content analysis by JG [30]. After coding, themes were identified and responses were grouped into the three participant groups and reevaluated. Each of these stages was discussed in detail with all authors and codes were adjusted as necessary. Typographical errors in free-text responses were corrected for clarity.

#### Results

Respondents reported being either an assistance dog owner (31.1%) or a companion dog owner (68.9%). All assistance dog handlers reported experiencing one or more disabilities. In addition, only 29.7% of companion dog owners reported experiencing no disability, with 70.3% having experienced one or more disabilities since having their companion dog. This high proportion of companion dog owners with disabilities likely reflects the recruitment method, which targeted persons with disabilities. Nearly all participants (98.3%) reported being the primary caregiver for their dog.

Participants reported having lived with their dog from 2 months up to 19 years ( $M = 4.83$  years,  $SD = 3.74$  years). Various types of assistance dogs were represented, including psychiatric assistance dogs ( $n = 37$ ), hearing dogs ( $n = 31$ ), guide dogs ( $n = 27$ ), mobility assistance dogs ( $n = 19$ ), autism assistance dogs ( $n = 10$ ), diabetes alert dogs ( $n = 7$ ), seizure alert dogs ( $n = 4$ ), and other ( $n = 22$ ). Open-ended responses for "other" showed that this group typically reported their dog performing functions related to more than one type of assistance dog. Most commonly this involved mobility ( $n = 9$ ) and psychiatric assistance dog ( $n = 8$ ) tasks or a medical alert function other than for diabetes or seizures ( $n = 7$ ). The main reason participants had companion dogs was for companionship ( $n = 287$ ); a few participants reported having a companion dog to decrease depression ( $n = 18$ ) or anxiety ( $n = 9$ ).

#### Do the three groups differ significantly on demographic and relationship variables?

For participants who reported experiencing disabilities, an independent-samples  $t$ -test was conducted to compare the number of disabilities experienced between companion dog owners and assistance dog handlers. Assistance dog handlers had significantly more disabilities than companion dog owners with disabilities ( $t(249) = 6.36$ ,  $p < .001$ , two-tailed) as seen in [Figure 1](#). The magnitude of the differences in the means (mean difference = 0.88, 95% CI: 0.61–1.15) was moderate (eta squared = 0.09).



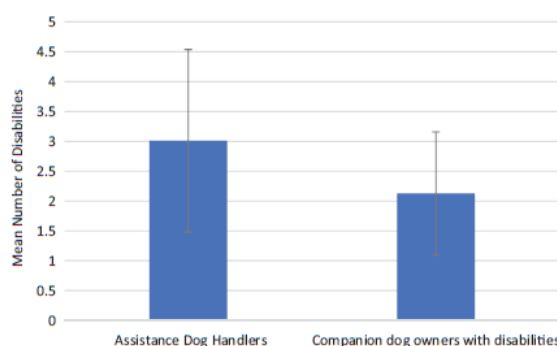


Figure 1. Bar graph depicting mean number of disabilities reported by assistance dog handlers and companion dog owners with disabilities. The difference between the groups was significant ( $p < .001$ ).

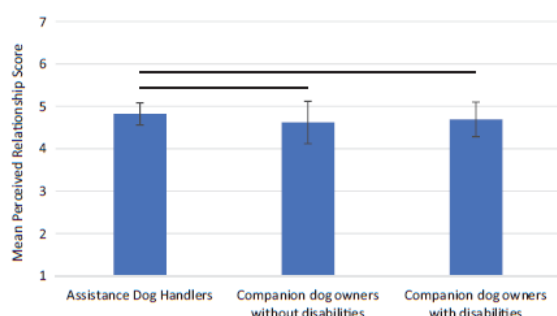


Figure 2. Bar graph depicting mean perceived relationship scores for the three groups. Lines above columns indicate significant differences in the Tukey HSD *post-hoc* test.

A one-way between groups ANOVA revealed a statistically significant difference in age between the three groups of participants,  $F(2, 509) = 3.89, p = .021$ . Companion dog owners without disabilities had the highest mean age ( $M = 46.4$ ), whereas assistance dog handlers ( $M = 45.6$ ) and companion dog owners with disabilities ( $M = 42.3$ ) were younger. Despite reaching statistical significance, the actual difference in mean scores between the groups was small, as was the effect size ( $\eta^2 = 0.015$ ). *Post-hoc* comparisons using the Tukey HSD test indicated that the difference between the mean scores for age for companion dog owners with and without disabilities reached statistical significance ( $p = .050$ ).

A one-way between groups ANOVA revealed a statistically significant difference in the perceived dog-owner relationship scores between the three groups of participants,  $F(2, 514) = 10.1, p < .001$ . Assistance dog handlers achieved the highest mean score for perceived relationship quality, as seen in Figure 2. The effect size, calculated using  $\eta^2$ , was small, at .04. *Post-hoc* comparisons using the Tukey HSD test indicated that assistance dog handlers were significantly different from companion dog owners with disabilities ( $p = .001$ ) and without disabilities ( $p < .001$ ). There was no significant difference between companion dog owners with or without disabilities (Figure 2).

#### *The influence of age and perceived relationship on overall support perceived from the dog*

Because the three groups differed on age and perceived relationship quality, a one-way ANCOVA was conducted to compare the

three groups on the overall support they perceived from their dog, with age and perceived relationship scores used as covariates. An ANCOVA demonstrated that there was a significant difference between the groups on overall support perceived,  $F(2, 387) = 9.1, p < .001$ , but with a small effect size, partial  $\eta^2 = 0.045$ . There was a large relationship between overall support and perceived relationship quality (partial  $\eta^2 = 0.28$ ), and a small relationship for overall support and age (partial  $\eta^2 = 0.033$ ). The quality of the human-dog relationship had the largest impact on overall perceived support provided by the dog.

#### *Differences in perceptions of life status variables by the three groups*

To obtain a clearer understanding of the impact life status variables (i.e., satisfaction with life and current perceived difficulties) had on the three groups, two one-way between groups ANOVAs were used. The first of these revealed a statistically significant difference in SWL between the three groups of participants,  $F(2, 509) = 15.46, p < .001$ . Companion dog owners without disabilities obtained the highest mean score for SWL, as seen in Figure 3(a). The difference in mean scores between the groups was moderate ( $\eta^2 = 0.06$ ). *Post-hoc* comparisons using the Tukey HSD test indicated that companion dog owners without disabilities had significantly higher life satisfaction than assistance dog handlers ( $p < .001$ ) and companion dog owners with disabilities ( $p < .001$ ). There was no significant difference between assistance dog handlers and companion dog owners with disabilities (Figure 3(a)).

A one-way between groups ANOVA revealed a statistically significant difference in CPD between the three groups of participants. Companion dog owners with disabilities recorded the highest mean score for CPD, as seen in Figure 3(b). The difference in mean scores between the groups was small ( $\eta^2 = 0.034$ ). *Post-hoc* comparisons using the Tukey HSD test indicated that companion dog owners without disabilities were significantly different from companion dog owners with disabilities ( $p < .001$ ) and assistance dog handlers ( $p = .019$ ). There was no significant difference between assistance dog handlers and companion dog owners with disabilities (Figure 3b).

#### *Relationship between overall support and current perceived difficulties or satisfaction with life*

From the TTR theory it would be expected that people who experience high adversity (high CPD) may also perceive their dog to provide more support. However, the correlation between overall support and CPD was not significant; people who perceived more current difficulties in their life did not perceive their dog to provide more support than those who perceived fewer difficulties. However, there was a small positive correlation between SWL and overall support perceived,  $r = 0.29, n = 405, p < .001$  indicating that higher SWL was associated with higher overall support perceived. Among respondents with a disability, a partial correlation was performed to determine if the type of dog (companion or assistance dog) had an influence on the relationship between CPD and overall support. The type of dog did not have a significant influence  $r = -0.052, p = .33$ .

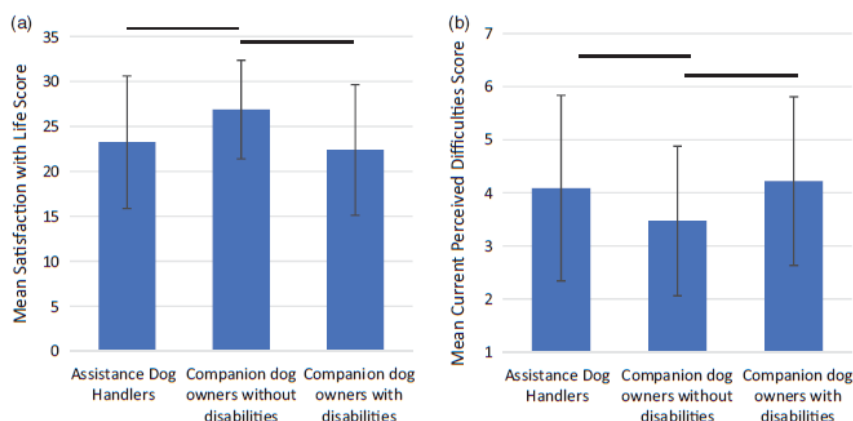


Figure 3. Bar graphs depicting mean scores for satisfaction with life (SWL; (a)) and current perceived difficulties (CPD; (b)) reported by the three groups. Lines above columns indicate significant differences in the Tukey HSD *post-hoc* tests.

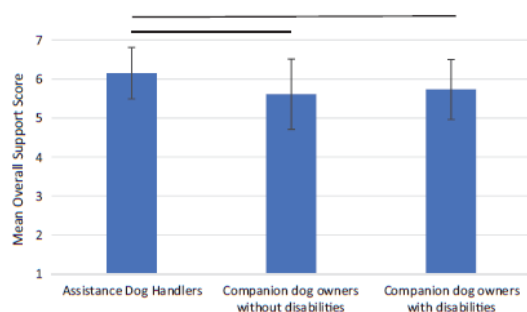


Figure 4. Bar graph depicting mean overall support perceived by the three groups. Lines above columns indicate significant differences in the Tukey HSD *post-hoc* tests.

#### Differences in perceptions of support for the three groups

A one-way between groups ANOVA was used to measure differences between the three groups on the overall support perceived to be provided by the dog. There was a statistically significant difference in overall support perceived for the three groups:  $F(2, 394) = 14.45$ ,  $p < .001$ . The effect size was medium ( $\eta^2 = 0.07$ ). *Post-hoc* comparisons using the Tukey HSD test indicated that assistance dog handlers perceived significantly more support compared to companion dog owners with disabilities ( $p < .001$ ) and companion dog owners without disabilities ( $p < .001$ ), but no differences were observed on total support perceived between the two types of companion dog owners. Mean scores and standard deviations can be seen in Figure 4.

#### Are there group differences in experiencing the ten components of thriving?

To investigate each group's perception of support for each component of thriving, a one-way between groups ANOVA was used. These revealed a statistically significant difference in scores for nine of the ten indicators of thriving across the three dog types (Table 1). Assistance dog handlers reported higher mean scores for all categories than companion dog owners with or without disabilities.

For all indicators except "discovery of self and life purpose", which was not significant between groups with the one-way between groups ANOVA, *post-hoc* Tukey HSD tests revealed significant differences between groups as shown in Table 1. After Bonferroni corrections at 0.005 significance level, there were significant differences between assistance dog handlers and companion dog owners with and without disabilities for nine of the 10 indicators of thriving. Companion dog owners with and without disabilities were not significantly different from each other on any indicator.

#### What did respondents reveal about how their dog assisted them to thrive?

Due to the new application of the TTR theory in this context, and the many categories in which dogs could conceivably assist their handler or owner to thrive, we wanted to obtain reports from our participants as to how their dog assisted them to thrive. This was done through one open response question at the end of the survey, "what specifically does your dog do to help you thrive?" The open response allowed us to determine which benefits were perceived to be the most important and if there were differences in how the three groups perceived their dog to assist them to thrive. Commonly, people without disabilities used short and general statements to explain their thoughts, whereas people with disabilities articulated specific examples. The explicit nature of the responses was the most noticeable with assistance dog handlers, often reporting a list of tasks specifically trained to reduce the impact of their disability. The main themes revealed by our analysis are summarized below.

#### Companionship

Participants from all three groups emphasized the companionship and love that their dog provided them as being the main contributor to their ability to thrive. However, companion dog owners, especially those without disabilities, emphasized this much more prominently than assistance dog handlers. Companion dog owners without disabilities emphasized the adulation and the positive presence that dogs provided as a reason to help them to thrive. Sometimes this was the only explanation individuals gave. For example, a companion dog owner without disabilities stated that their dog assists them to thrive by "Showing constant love



Table 1. Results from one-way between groups ANOVAs comparing (a) assistance dog handlers, (b) companion dog owners with disabilities and (c) companion dog owners without disabilities on ten indicators of thriving. Items in bold were significant at  $p < .005$ . Columns on right indicate significant Tukey HSD *post-hoc* comparisons.

Indicator of thriving	Mean (SD)			F	df	p value	Eta Sq.	a ≠ b	a ≠ c	b ≠ c
	(a)	(b)	(c)							
Development of skills/talents	6.12 (0.76)	5.62 (0.95)	5.50 (1.04)	19.869	2, 512	<.001	0.07	***	***	–
Discovery of self and life purpose	5.93 (0.92)	5.78 (0.84)	5.77 (0.98)	1.628	2, 513	.197	0.01	–	–	–
Accumulation of wisdom	6.04 (0.89)	5.73 (0.89)	5.72 (0.99)	6.551	2, 512	.002	0.02	**	+	–
Development of core strength	6.45 (0.62)	6.03 (0.86)	5.86 (0.92)	20.623	2, 512	<.001	0.07	***	***	–
Positive view of oneself	6.31 (0.74)	5.72 (0.97)	5.57 (1.08)	26.967	2, 513	<.001	0.10	***	***	–
Positive view of others	5.82 (0.99)	5.27 (1.09)	5.36 (1.13)	13.511	2, 514	<.001	0.05	***	**	–
Movement toward full potential	6.18 (0.83)	5.75 (1.00)	5.60 (1.03)	14.468	2, 514	<.001	0.05	***	***	–
Relationship growth/prosperity	5.76 (1.05)	5.17 (1.20)	5.19 (1.19)	14.146	2, 513	<.001	0.05	***	***	–
Psychological health	6.04 (0.80)	5.73 (0.86)	5.75 (0.95)	6.861	2, 513	.001	0.03	***	+	–
Physical health	6.37 (0.69)	6.07 (0.79)	6.04 (0.79)	9.012	2, 513	<.001	0.03	***	**	–

\* $p \leq .05$ , \*\* $p \leq .01$ , \*\*\* $p \leq .001$ .

and devotion through all moments in life." However, few assistance dog handlers' responses involved information only about their dog providing love and companionship. Instead companionship was paired with specific tasks, such as "They help me to function in society, stop meltdowns and self-injurious behaviours and provide companionship, among other things." This indicates that companionship is common throughout the groups, but supplemented by other functions in assistance dog owners.

#### Confidence

Confidence was commonly emphasized as well, but to a greater extent by people with assistance dogs than owners of companion dogs with or without disabilities. Assistance dog handlers commonly commented on how their dog provided them confidence in dealing with things they normally would not do, "Confidence in getting out and about and dealing with any situation that may arise" or "gives me confidence to face everything." Confidence was also discussed in relation to their dog's trained ability: "confidence in my dog's ability to forewarn me of high and low glucose; I am more sure I will be able to continue living on my own." But both assistance dog handlers and companion dog owners talked about the dog providing a source of self-confidence. As one participant (companion dog owner with disabilities) described it, "He gives me confidence and strength in being there when I'm [too] emotionally unstable to cope with anything else."

#### Social

The social aspects of dogs were, as expected, extensively noted as enhancing both owners' and handlers' ability to thrive. One assistance dog handler explained the dog's ability to encourage her to get outside, and while out there to subsequently get exercise and meet new people. These sentiments were shared by companion dog owners. As one assistance dog handler said:

"[My dog] helps to break the ice when going into new social environments, encourages physical activity, her confidence gives me the confidence to go about my business knowing that I am safe, I am loved and appreciated. That the ground underneath me is stable. I have no excuse for not walking out the door. Because she's there, making sure I do. Physical exercise is important for anyone's overall health, but for me, it's imperative, otherwise I lose muscle tone rapidly, but often motivation is an issue for me, particularly when exhausted or having a high-cortisol day. She also encourages me to go outside of my immediate social circle and interact with different people and in unfamiliar environments... unfamiliar territory is a trigger for me."

Through this quote it can be seen how the dog helped the participant experience life above and beyond what she believed is necessary for a person without her disability. Her statement

eloquently emphasized the social aspects of dog ownership, which were echoed by other participants.

#### Safety

More so than companion dog owners, assistance dog handlers most commonly reported their dog helping them to thrive by providing safety or a feeling of safety. "My dog has given me a sense of security to manage and overcome the fear of losing control of my diabetes." Companion dogs, especially for people with disabilities, were reported to provide safety for their owners in similar ways to assistance dog handlers. For example, one companion dog owner stated "He gives me a feeling of security and helps me get out of the house. I have [post-traumatic stress disorder] and sometimes just having him here with me makes me feel safer." Safety was not talked about in terms of guarding or physical protection roles.

Only one person did not have a positive view of their dog's ability to assist them to thrive in the open response question, as they stated "My dog is a dog. It has no bearing on me and my abilities. I would be the same with or without my dog." This participant did not report having a disability. People without disabilities more commonly commented on the dog's natural qualities like "just being a dog" or "not judging, being there" as the only explanation for how their dog assisted them to thrive.

#### Discussion

The current study aimed to compare assistance and companion dogs in relation to their ability to assist their handler/owner to thrive. To facilitate this, the ten contributors to thriving described in the Thriving Through Relationships (TTR) theory were used as a framework within which to compare the types of dogs. Results showed that both types of dogs assisted their handler/owner to thrive, but assistance dogs were reported to provide significantly more support than companion dogs overall, and on nine of the ten components of thriving.

The difference in support perceived to be provided by companion and assistance dogs appeared to be strongly associated with the strength of the human-dog relationship. The majority of respondents reported being their dog's primary caregiver and having a strong relationship with their dog. Assistance dog handlers, however, had a significantly stronger perceived relationship than companion dog owners, and the perceived relationship (as a covariate) had a strong influence on the overall support perceived. Other research has shown that bonding measures with a dog are associated with sub-scales of self-concept, positivity, physical and social domains within the Tennessee Self-Concept

Scale [31]. These domains are similar to thriving components presented in the TTR theory, thereby supporting our findings. This is important as it strongly emphasizes the influence of relationships and bonding on the support provider's ability to assist a person to thrive.

Assistance dogs' trained abilities cannot be overlooked as a contributing factor to their handler's ability to thrive. These trained abilities, which directly influence the handler's disability, may contribute to the handler's perception of overall support. The trained abilities however, did not appear to affect individual's perception of their current difficulties or satisfaction with their life, which appeared to be more influenced by their disability status (present versus absent) rather than the training of their dog (assistance dog versus companion dog). Nonetheless, training appeared to be an important factor based on the open-ended responses. Assistance dogs were reported to provide more specific, often trained, benefits than companion dogs. Handlers often described or listed the trained abilities their assistance dog had in demonstrating the way the dog assisted them to thrive.

The difference in perception of support between groups may be due to an assistance dog's trained abilities actually providing more support for their handler than a companion dog's level of support. However, it is also possible that, through the acquisition of an assistance dog, organizations emphasize that the dog will assist their handler in certain ways, priming handlers to believe their dog will provide support, whereas breeders and shelters may not. Since we did not hide our intentions with this study, it is possible that handlers were responding according to this self-fulfilling prophecy. This may also explain why assistance dog handlers could express how their dog assists them to thrive in more specific terms than companion dog owners.

Assistance dogs assist people with significant disabilities and it would be expected that assistance dog handlers may experience disabilities that have a more profound impact on their life than companion dog owners. Handlers, therefore, may require more support and subsequently perceive more support from their dog, with this potentially contributing to the differences in overall support perceived. Even though handlers experienced significantly more disabilities, and potentially more severe disabilities than companion dog owners, our population of companion dog owners experienced a much higher frequency of disabilities than the average population. However, it enabled us to better understand that companion dogs can provide support for people with disabilities as well. Unfortunately, this dataset was deemed unsuitable for using number of disabilities in an analysis of covariance, because it correlated very strongly with other covariates. The influence of number and severity of disabilities should be explored further in future research.

Applying the psychological concept of thriving to the support that dogs provide has revealed that dogs have the ability to assist their handler/owner to lead positive and productive lives and ultimately thrive. This study showed that, irrespective of role, higher-quality relationships between handler/owner and dog enhance that person's ability to thrive, especially for individuals who experience disabilities. Acknowledging that dogs can provide support, regardless of severity of disability or level of training, may have a great impact on how disability support agencies support people with disabilities through the use of dogs. Shifting the conceptual idea that only assistance dogs can provide benefits to people with disabilities may help to relieve pressure from assistance dog organizations. Perhaps disability support agencies and assistance dog organizations should shift their perception from focusing on disability, to instead focus on what will assist a

specific person to thrive. It may be that, for some people, assistance dogs' ability to provide significantly more support may outweigh the time, energy, and financial costs of obtaining an assistance dog. However, there may be circumstances where sufficient support can be derived from a companion dog, thereby potentially relieving some burdens on the assistance dog industry.

### Limitations and future directions

While this study was innovative in its application of a theory not previously applied to this area, the results should be interpreted cautiously due to the unsubstantiated validity of the questions in relation to the theory. The ten indicators of thriving that form the basis of the TTR theory, were first presented at a conference in 2012 and described in detail in a 2014 publication [25,26]. We do not know of existing scales that have measured the TTR's indicators of thriving in terms of social support provided by humans. Since there was no existing scale to adapt for use in measuring dog-human relationships, we were required to create one for this study. Future research should replicate this survey to determine whether it is valid in other populations. Future studies should also consider adapting the survey to better differentiate between SOS and RC support, which are distinct support types within the theory itself, but highly correlated in our results.

There were also limitations of the study associated with the recruitment method. There were low numbers of certain types of assistance dogs represented, thereby limiting the possible comparisons between the types of dogs on the ten indicators of thriving. Participants with disabilities that prevent them from being aware of or accessing online resources were not represented. Future work should explore potential differences in these groups. Our sample also experienced a higher number of disabilities and perceived a stronger relationship with their dog that might be expected in the normal population. This could be due to our recruitment method initially targeting people with disabilities; also, people who have a strong relationship with their dog are more likely to complete these types of surveys [32–34]. These limitations should be considered in future work. This study was also limited in the number of people who coded the qualitative data, potentially allowing for biases to develop. However, the data proved insightful and more qualitative work should be included to better understand the application of the human-dog relationship to this theory.

### Conclusion

The current study investigated differences between companion dog owners' and assistance dog handlers' perceptions regarding how their dog supports them to thrive. This was examined through the Thriving Through Relationships theory's framework and ten components of thriving. The findings suggest that both companion dog owners with a disability and assistance dog handlers perceive their dog to provide support which assists them to thrive. Overall, and in relation to nine of the ten contributors of thriving, assistance dog handlers perceived significantly more support than companion dog owners. Further analysis demonstrated that the difference in perception of support may be due to the human-dog relationship and the trained abilities that assistance dogs have in comparison to companion dogs. This finding is important for the growing assistance dog industry and people, especially those who have disabilities, who are interested in acquiring a companion or assistance dog. Future research is



recommended to expand upon the current findings and to explore how a dog's ability to provide support compares to other forms of support.

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### Disclosure statement

No potential conflict of interest was reported by the authors.

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A copy of the survey can be found in Appendix C.

### **3.2 Further discussion**

The primary aim in this chapter was to determine whether people perceived that their dog assisted them to thrive. This phenomenon was investigated with owners and handlers due to the prevalence of benefits CDs and ADs have been known to provide, which appeared to align with the thriving construct. It was expected that both handlers and owners would perceive that their dog assisted them to thrive, which was supported. Yet due to the specialized training that ADs receive, they had traditionally been assumed to provide more benefits, which was also supported.

This was the first study that I know of, that demonstrated an AD's ability to provide support above that of a CD. This finding is significant for the AD industry because of the extensive time, resources and money dedicated to training ADs. The high cost of acquiring an AD and the dog's privilege resulting from the specialized training signifies that ADs should provide more support than a relatively untrained CD. The presented results validated this belief.

Although the thriving theory was beneficial in framing this quantitative study, careful analysis of this theory and further theoretical exploration revealed some limitations that challenged the practicability of applying it further. It was recognized that the definition of thriving provided may not have aligned with or encompassed all aspects of the participants' colloquial definition, as thriving is subjective (Brown et al., 2017). It was also recognized that participants could be living their best possible life and not, by definition, be thriving. Therefore, for the remaining portion of this thesis, thriving will be discussed in more general terms, referred to as 'living their best life.'

Additionally, throughout the analysis, it became apparent that many of the benefits reported by participants in the open response section and within the broader literature base could belong to more than one long-term thriving category. For example, ADs were commonly reported to increase their handlers' confidence. This could relate to the long-term indicator of thriving 'discovery of self and life purpose' or 'positive view of oneself.' Additionally, the commonly reported benefit of decreasing stress and anxiety could relate to the long-term indicator of thriving 'development of core strength' or 'psychological health.' This overlap was not as conceptually useful as distinct categories.

Finally, it appeared that the TTR theory was not as applicable to the AD population as initially expected. For example, people with disabilities experience many challenges within their daily lives that may require support. This support, according to the TTR theory would occur in times of adversity (SOS support); however, people with disabilities could potentially require this support indefinitely, but not perceive their life to be one of constant adversity. This difference in conceptualization between perceived adversity or normalcy hindered the greater application of this theory. Additionally, TTR theory lacks specific consideration for the challenges people with disabilities face and how this impacts the beneficial support they may also receive. Therefore, this theory was not as directly applicable as initially expected.

As this thesis' aim was not to test the TTR theory, the theory continued to be used as a theoretical positioning for the questions posed in this thesis. The TTR theory provided insight into whether an individual perceived that they could thrive with an AD. However, it was not viable to understand *how* an AD can assist a person to live their best

life. Consequently, the TTR theory was beneficial in assisting to frame the qualitative methods of the next study, but not to test it.

### **3.3 Summary**

Through a questionnaire based on the TTR theory framework, the work described in this chapter demonstrated that handlers did perceive that their dog assisted them to thrive, or more generally, to live their best life. ADs were also perceived to provide more support than CDs. These findings were important to validate the use of ADs as a form of assistive technology.

More work needs to be done to determine what precisely ADs do that primes their handler to believe that they assist them to live their best life. This was explored throughout the remainder of the thesis. To look at the issue more comprehensively, a group of case studies were examined over time. This investigation began by seeking to understand the handlers' and their support networks' expectations for the prospective ADs before they received the dog.



## **CHAPTER 4: Expectations prior to receiving an assistance dog**

As proposed in Chapter 2 and substantiated in Chapter 3, handlers believe that an AD assists them to live their best life and that AD's are more beneficial than CDs. This then raised the more interesting question of exactly *how* ADs assist their handler to live their best life, the second research question posed in this thesis. Throughout the next four chapters, eight case studies were employed to explore this question in-depth and longitudinally, including: prior to receiving their AD (Chapter 4), one month after receiving the dog (Chapter 5), six and twelve months after receiving their dog (Chapter 6) and a combined analysis across time points (Chapter 7).

To begin this investigation, it is essential to understand prospective recipients' expectations before they receive an AD, the aim of this chapter. This information is important as it acts as a baseline to delineate expectations from experiences. Most AD studies discuss handlers' pre-AD expectations retrospectively, whereby there is a probability that they describe previous expectations under the light of their current experiences, creating hindsight bias (Schkade & Kilbourne, 1991). This potentially arises from an individual's tendency to immediately assimilate new information with their prior knowledge of an event or selective recall of previous information, which can lead to erroneous conclusions (Schkade & Kilbourne, 1991). Therefore, to obtain the most accurate understanding, it was crucial to understand what handler's lives were like and their perceptions or expectations prior to receiving their AD.

To accomplish this, interviews were collated from various perspectives (handlers/prospective recipients, family members, carers/others and AD instructors) and

presented in a paper titled “Expectations regarding receiving an assistance dog:

Perceptions of prospective recipients, family members, and assistance dog instructors.”

This manuscript was accepted for publication by *People and Animals: The International Journal of Research and Practice* in October 2019. Following this paper, the origins of the expectations will be discussed regarding preparation that AD organizations provide their clients.

#### **4.1 Paper 3: Expectations regarding receiving an assistance dog: Perceptions of prospective recipients, family members, and assistance dog instructors**

Gravrok, J., Howell, T., Bendrups, D., Bennett, P. (under review). Expectations regarding receiving an assistance dog: Perceptions of prospective recipients, family members, and assistance dog instructors. Submitted to *People and Animals: The International Journal of Research and Practice*, December 9, 2018.

Expectations regarding receiving an assistance dog: Perceptions of prospective recipients, family members, and assistance dog instructors

**Abstract**

The assistance dog industry is growing and the benefits that these dogs potentially provide are becoming well-known. This could lead to unrealistic expectations on the part of those receiving dogs, or on the part of family members, carers or instructors, which could jeopardise successful placements. To investigate this, we used semi-structured interviews to explore expectations of prospective assistance dog handlers and people associated with the handler. Participants included seven prospective recipients (three aged under 18 years and four adults), eight family members/carers, and five assistance dog instructors, recruited from three assistance dog organizations in Australia. The inclusion of family members/carers and assistance dog instructors provided a better understanding of the holistic impact the dog was expected to have, especially for people who would be heavily involved in the acquisition process. Many expected benefits and challenges were reported, these mainly fell within physical, psychological and social categories. Expected benefits aligned with actual outcomes reported in other studies; however, challenges have been under-reported in relevant literature. Their identification may offer assistance dog organizations ways to better understand and develop evidence-based practices.

**Keywords:** assistance dog, service dog, handler, social support, expectations

### 3 Introduction

To better understand this issue, this research project engaged with first-time handlers to ascertain their expectations prior to receiving an assistance dog. In this paper, we first refer to medical and disability studies that explore the impact that expectations have on intervention outcomes, and we analyse previous investigations in the assistance dog literature regarding expectations. We then present the results of interviews conducted to explore expectations in a sample of future handlers and other people involved in the acquisition of an assistance dog. Finally, we propose how these expectations could affect handler satisfaction after placement of the dog.

24        Within medical and disability settings, a shift has occurred to encourage a client-  
25        centred approach, whereby medical patients and people with disabilities are involved in  
26        decision making concerning their care (Drake et al., 2001; Kessler, Walker, Sauv -Schenk, &

27 Egan, 2018). By optimizing the client-centred approach, through evidence-based practices,  
 28 practitioners can understand clients' expectations of their chosen intervention and  
 29 subsequently can support and improve satisfaction and outcomes (Barron et al., 2007;  
 30 Thompson & Sunol, 1995).

31 Thompson and Sunol (1995) identified four types of expectations, which were  
 32 proposed as a framework to assist understanding (Thompson & Sunol, 1995). These are:  
 33 idealistic expectations – aspirations, desires and wants concerning best possible outcomes;  
 34 predicted expectations – more realistic expectations based on anticipated outcomes;  
 35 normative expectations – what is expected based on the experiences of others; and unformed  
 36 expectations – when users are unwilling or unable to articulate their expectations. Although  
 37 this framework is frequently used, there is overlap between categories and the constructs are  
 38 often not well delineated (Bialosky, Bishop, & Cleland, 2010).

39 Notwithstanding this limitation, many studies have linked positive expectations with  
 40 positive outcomes, such as: better health and post-treatment outcomes (Mondloch, Cole, &  
 41 Frank, 2001), disability status (Colloca & Miller, 2011; Mondloch et al., 2001; Sullivan et al.,  
 42 2011) and quality of life (Juergens, Seekatz, Moosdorf, Petrie, & Rief, 2010; Sears et al.,  
 43 2004). Furthermore, individuals who expect better outcomes show more improvement  
 44 (Gonzalez Sáenz de Tejada et al., 2010; Linde et al., 2007), while unrealistic expectations  
 45 may foster discouragement (Gonzalez Sáenz de Tejada et al., 2010). Therefore, realistic  
 46 expectations are an important contributor to positive outcomes (Cmar, 2015; Cormier,  
 47 Lavigne, Choinière, & Rainville, 2016). Communication between the recipient and  
 48 intervention provider is important (Kessler et al., 2018; Woolley, Kane, Hughes, & Wright,  
 49 1978), especially to understand recipient expectations and correct unrealistic expectations  
 50 when necessary (Mondloch et al., 2001). Expectations typically arise from learned  
 51 information, previous experience, social interactions and support, verbal persuasion, and  
 52 anticipation of benefits (Colloca & Miller, 2011; Mondloch et al., 2001). By understanding

53 participant expectations, providers can alter their implementation or intervention strategy to  
54 enhance the quality of intervention and subsequent outcomes (Mondloch et al., 2001).

55 Assistance dog providers (or organizations) recognize the importance of evaluating  
56 intervention outcomes (Butterly, Percy, & Ward, 2013) but often these are measured  
57 retrospectively, without consideration for a client's expectations. When expectations are  
58 considered, researchers often use a process that Brown and Michael refer to as *retrospecting*  
59 *prospects*, where recipients are asked to remember what their expectations were prior to  
60 receiving their assistance dog (Brown & Michael, 2003). This analysis typically takes place  
61 months or years after the dog is received (Burrows, Adams, & Millman, 2008; Burrows,  
62 Adams, & Spiers, 2008; Connolly, 2004; Davis, Nattrass, O'Brien, Patronek, & MacCollin,  
63 2004; Sanders, 2000). While insightful, this type of analysis can encourage hindsight bias.  
64 Consequently, limited information is available about what handlers understand or believe  
65 about the experience of acquiring an assistance dog *before* acquisition.

66 Qualitative measures have provided some insights into expectations of prospective  
67 assistance dog recipients. The most comprehensive investigation, by Wiggett-Barnard and  
68 Steel (2008), measured expectations of guide dog handlers through interviews before and  
69 after receiving their dog. The participants mentioned expectations for improved mobility,  
70 safety, and increased ease of access to unknown environments compared with other mobility  
71 aids, and these expectations were typically met. However, most of the results reported  
72 retrospectively prospect accounts of expectations from later interviews, while emphasizing the  
73 actual benefits experienced. Additionally, two useful reports by Hart et al. (1995; 1996)  
74 utilized prospective hearing dog handlers' expectations in comparison to current handlers'  
75 reported outcomes. These studies found that prospective handlers' expectations aligned with  
76 current handlers' reported benefits. Rabschutz (2009) reported using surveys, observations  
77 and interviews, prior to and after placement with an assistance dog. Although her design  
78 appeared comprehensive, only interview quotes were reported, leaving room for further  
79 evaluation on this topic.



Overall, intervention studies emphasize managing expectations to increase positive outcomes (Cormier et al., 2016). Studies with assistance dogs, however, have not sufficiently explored prospective handlers' expectations. The aim of this study was to explore expectations of prospective handlers' and other influential people involved in the process of acquiring an assistance dog. It is anticipated that the information we report will enable assistance dog organizations to better manage expectations and facilitate positive outcomes.

## **Approach**

The expectation literature does not currently have a standardized measure of expectations which could be adapted for use in this population (Bialosky et al., 2010), and as expectations are rarely reported, a qualitative interview based approach was used to generate this new information (Mack, Woodsong, MacQueen, Guest, & Namey, 2005; Morgan & Smircich, 1980). Interview-based techniques were used to address the participants' point of view, which encouraged disclosure of information that otherwise may not have been revealed (Tracy, 2013). A case-study approach was also used, in which several people associated with each of the prospective handlers were interviewed. The scope of this paper, therefore, extends beyond other assistance dog studies, which generally focus solely on the handler (i.e., the recipient). Our work reflects holistic perspectives from stakeholders that may influence the expectation-forming process ahead of receiving an assistance dog.

## **Method**

All procedures were approved by La Trobe University Human ethics committee (HEC16-106).

## **Participants**

Three organizations assisted with recruitment of eight prospective handlers, with the desired experience level (Graneheim, Lindgren, & Lundman, 2017), who were soon to receive their first assistance dog. These formed the basis of eight case studies. Participants included: potential assistance dog recipients ( $n = 7$ ); family members and carers ( $n = 8$ ); and,



106 assistance dog instructors (n = 5). This provided sufficient variation and rich data to  
 107 constitute transferability of the findings (Fusch & Ness, 2015; Graneheim et al., 2017). All  
 108 prospective recipients (PR) were acquiring their first assistance dog. Instructors were  
 109 individuals qualified by an organization to train an assistance dog and instruct a PR on how to  
 110 work with their dog.

### 111 *Materials*

112 Interview questions were developed based on information from the literature  
 113 regarding assistance dog expectations and benefits (Guest, Collis, & McNicholas, 2006;  
 114 Wiggett-Barnard & Steel, 2008). Main topic areas included physical, psychological and  
 115 social expectations. Questions were similar between participants; however, delivery was  
 116 altered based on the interviewee's relation to the dog and the type of assistance dog.

### 117 *Procedures*

#### 118 *Recruitment/participant selection.*

119 Prospective recipients were contacted by their assistance dog organization one week  
 120 to one year prior to receiving their dog, for voluntary participation in this study. This range  
 121 was due to organizational differences in the ability to inform PRs when they would receive  
 122 their dog. All eligible participants were accepted. After contacting the PR, we also attempted  
 123 to contact family members and the instructor who would be working with the PR.

#### 124 *Interview procedures.*

125 Semi-structured interviews were conducted between September 2016 and November  
 126 2017. Written informed consent was obtained from all adult participants. Child participants  
 127 provided verbal assent, which was supported with parental written consent. Interviews were  
 128 conducted by JG and ranged from 40 to 90 minutes. All interviews were conducted in person  
 129 except for phone interviews with two parents and one instructor. One PR was interviewed at  
 130 the organization's location, during a training camp that JG was invited to attend. All other  
 131 interviews were conducted in an environment familiar to the PR (e.g., their home, local café).

Participants were encouraged to provide their unique perspective to the interview. Depending on the severity or type of disability, some interviews with PRs were conducted with support from another individual to enhance the interviewer's understanding of speech impediments, etc., as necessary. Five interviews involved another person, typically a parent, to support the PR. In these cases, this individual was encouraged to rephrase the question, or prompt the PR with examples that the interviewer would not have prior knowledge about, to facilitate the continuation of conversation. This structure helped the PRs to talk more fluidly about expectations for their dog.

#### 140 *Data Analysis*

Due to the three main points of view (PRs, family members/carers and instructors) represented in interviews, data source triangulation was used to increase the reliability of the findings (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014; Guba, 1981). Inductive content analysis was used to develop themes (Elo & Kyngäs, 2008). To do this, each interview was recorded on a digital recorder and later transcribed. Data were then de-identified prior to uploading to QSR International's NVivo 10 qualitative data analysis software. Within NVivo, key themes or patterns of expectations were identified using inductive content analysis by JG (Elo & Kyngäs, 2008; Graneheim et al., 2017; Hsieh & Shannon, 2005). To ensure relevant codes were created, JG read and coded transcripts multiple times to ensure codes were consistent (Zhang & Wildemuth, 2016). To achieve external validity, themes identified were compared to previous reports of expectations.

#### 152 **Results**

##### 153 *Demographic information*

PRs included four youths (10-18 years) and four adults (21-43 years). Table 1 shows the participants involved in each case study and the type of assistance dog the PR was expected to receive. Expectations appeared to be influenced by their experience level with dogs, but not the type of assistance dog, however there were insufficient samples from each type of dog to determine this. Due to time constraints and other factors outside of our control,

159 success in recruiting multiple people for each case study was variable. The youngest PR was  
 160 not involved in an interview as he was unaware of the dog's impending arrival until the day  
 161 of initial training, a measure deemed by his parents to be best for his mental health. His  
 162 mother was interviewed instead.

163 Table 1: Descriptions of case study participants, the type of assistance dog that would be  
 164 received and their experience with dogs. PR = prospective recipient, P = parent, ADI =  
 165 assistance dog instructor.

Case study	PR assistance dog type	PR gender	PR age	Participants	Code	Dog experience
1	Seizure alert	M	25	Prospective recipient Parent Assistance dog instructor	PR1 P1 ADI1	Companion dogs Companion dogs Assistance dogs
2	Psychosocial	M	36	Prospective recipient Parent Carer Assistance dog instructor	PR2 P2 C2 ADI2	Companion dog Companion dog Companion dog Assistance dogs
3	Mobility	F	43	Prospective recipient Assistance dog instructor	PR3 ADI3	Companion dogs Assistance dogs
4	Medical alert	M	11	Prospective recipient Parent Assistance dog instructor	PR4 P4 ADI4	None – cats None - cats Assistance dogs
5	Guide	M	18	Prospective recipient Parent	PR5 P5	Parent's assistance dog Assistance dog
6	Medical alert	F	21	Prospective recipient Parent	PR 6 P6	None – cats None - cats
7	Guide	F	14	Prospective recipient Parent Assistance dog Instructor	PR7 P7 ADI7	Companion dogs Companion dogs Assistance dogs
8	Mobility	M	10	Parent	P8	None - cats

166

### 167 *Results of Thematic Analysis*

168 All themes, identified in NVivo, could be divided into two main categories, expected  
 169 benefits and expected challenges. Further, these were divided into physical, psychological  
 170 and social categories.

### 171 *Expected Benefits*

172 For some PRs and their family, acquiring a service dog was perceived to be their final  
 173 option. They were therefore hoping that the dog would provide substantial support that they  
 174 were unable to receive through other means: “We were so desperate for something to assist

175 [daughter] that [voice breaks, sounds like she is about to cry]... just hope it works” (P6). This  
 176 demonstrated the importance and high expectations, especially for people who were more  
 177 desperate for assistance in managing their disability. Other participants were also optimistic  
 178 but had more realistic expectations.

#### 179 *Physical*

180 Physical benefits were primarily represented through the increased assistance  
 181 participants believed that the dog would provide through trained abilities, subsequently  
 182 providing increased independence. Most participants could explain what their dog was being  
 183 trained for, and often expressed certainty in their dog’s ability to perform the trained  
 184 tasks/abilities. These expectations were often idealistic, such as when P4 reported that “[PR4]  
 185 knows that [the dog] will alert me”, or when P8 stated “So every time [the dog] will be able  
 186 to pick things up off the floor”. Other participants were more hesitant in saying that their dog  
 187 would definitely do certain things and expressed more normative expectations, such as “I  
 188 know that a guide dog should take you around things if you are going to fall or bang into  
 189 anything” (PR7).

190 The increased ability to do things, due to their dog’s trained tasks, was expected to  
 191 increase their independence. Depending on the nature of the disability, participants expected  
 192 to regain independence or develop it for the first time. Several participants highlighted  
 193 different types of independence and varying levels of certainty (sometimes idealistic but often  
 194 realistic) about when and to what extent independence would be achieved. For example, one  
 195 PR with an acquired mobility impairment, believed that having a dog would mean less  
 196 reliance on others: “At the moment if I drop something that I need picked up, I ring my next-  
 197 door neighbour and they come over and I guess I wouldn't be relying on [neighbour] as  
 198 much” (PR3).

199 For another participant, gaining independence was critical as she was presently unable  
 200 to leave her home without assistance, due to the nature of her disability:



201 “I’m house bound because of [my seizures], and if [my dog] can alert to my seizures  
 202 then I’ll be able to leave the house by myself. And that is such a big concept, because  
 203 that means even the simple things like, I’ll be able to go to my appointments on the  
 204 days that mum works because I will be able to take myself there with [my dog]”  
 205 (PR6).

206 Although PR6 had high hopes, her mother was apprehensive about the practicability of the  
 207 dog’s ability: “It would give her some level of freedom. I’m not quite sure how that would  
 208 work and I’m not completely confident that it will, particularly now she seems to be more  
 209 wheelchair bound, but that could change” (P6).

#### 210 *Psychological*

211 Psychological benefits focused on: increased safety, confidence, positive emotions,  
 212 empowerment and decreased anxiety. First, many participants expected that the assistance  
 213 dog would increase the handler’s safety. This was demonstrated in two domains. First,  
 214 physical safety, such as crossing roads. For example, one parent compared previous road  
 215 safety to: “but now of course with the dog, he has to stop, look, do all of those sorts of things.  
 216 I think it will increase that basic safety and awareness when he is out and about” (P2).  
 217 Additionally, and especially for PR’s whose dog would provide an alert function to medical  
 218 conditions, participants emphasized psychological safety - feeling safe and reassured because  
 219 the dog would alert to or before a medical event happened: For example, “Well it’ll alert  
 220 when my [medical condition] happens, so it’s that sort of safety of knowing that it’s going to  
 221 tell you when it happens” (PR4).

222 Second, an increase in confidence was expected primarily by PRs of guide dogs. This  
 223 was possibly due to their strong belief in the dog’s trained ability to guide them safely. Other  
 224 PR’s instructors had normative expectations that increased confidence would arise from the  
 225 assurance the dog would provide through trained abilities or expected success with the dog:

226 “We wanted to be able to get him to go out into the community a bit more. He will  
 227 always have a carer or a support person with him, but to be able to go out with  
 228 confidence, to also give him something to do he can concentrate and achieve with  
 229 success on what he’s doing, feeling good about his achievement” (ADI2).

230 Third, across all participant groups, assistance dogs were expected to elicit positive  
 231 emotions. Many future recipients expressed that dogs made them feel happier and, therefore,  
 232 assumed that their assistance dog would provide similar emotional benefits. One PR who had  
 233 experienced severe depression since acquiring her disability, expressed an idealistic  
 234 expectation that her dog would immediately minimize her loneliness and recurring morning  
 235 depressive state:

236 “That unconditional energy of having something next to you all the time, I really look  
 237 forward to having that again, and [...] another dog, omen and energy, another family  
 238 member [...] And they love, they can conjure up so much excitement if you are in a  
 239 low mood, and you just get a little bit of dog energy into me, it's infectious.” (PR3).

240 Similarly, one parent expected the dog to help her son to become less depressed and to  
 241 eventually reduce the amount of antidepressant medication required through increasing his  
 242 positive emotions. Other participants had similar views regarding the dog’s ability to make  
 243 them feel happy and provide other companionship-like feelings.

244 Fourth, and complimentary to increasing positive emotions, participants across all  
 245 groups expected the assistance dog to help decrease the recipients’ anxiety in both specific  
 246 (e.g. attending class) and generalised contexts. This was the main goal for one PR and  
 247 similarly strong for another participant who hoped to decrease his anxiety enough to sleep  
 248 without sedation. Both these expectations arose from previous experiences with dogs.  
 249 Another PR predicted that their dog would help ameliorate anxiety in social situations:

250 “[The dog will] provide sensory distraction, and for her to be able to calm me down  
 251 and all that sort of sensory processing and overload stuff that I have trouble with. [...]

252 but I'll have [the dog] and she will be able to ground me and centre me a bit more so I  
 253 don't have panic attacks as much and stuff" (PR6).

254 Finally, PR's were expected to take as much control over their dog as their disability  
 255 physically allowed. Gaining control was expected to be challenging based on the variability  
 256 and nature of their disability. For those whose disabilities limit personal control over their  
 257 life, this experience was expected to be empowering. One parent whose child was completely  
 258 dependent on other people, emphasized the positive impact gaining control would have:

259 "He likes to be in control of things and his dog he can be in control of, so I think that  
 260 will be a really big boost for his confidence and for his sort of stability and peace of  
 261 mind. I think it's going to be an amazing thing for him. Because it's responsibility and  
 262 control, that he hasn't really, doesn't really have because everybody controls  
 263 everything around him, so I really think this control of the dog and the fact that it's his  
 264 responsibility is going to be such a good boost for him and confidence builder" (P2).

265 Gaining control of the dog was expected to be a substantial contributor to increasing  
 266 empowerment for PRs. One instructor, however, emphasized that empowerment does not  
 267 come from the dog's ability to solve their problems, but instead from assisting them when  
 268 needed:

269 "the dog can support, if the participant has trouble opening the door, the dog can  
 270 offer support, but only if the participant can't do it by himself. That's our belief, we  
 271 believe to empower the client not to disempower the client" (ADI8).

## 272 *Social*

273 All participants expected an increased frequency of social interactions, increased  
 274 communication with others and that the dog would provide benefits to people other than the  
 275 PR. Expectations of social interactions were influenced by prior experiences with companion  
 276 dogs, often resulting in reasonably realistic expectations. Those with dogs commonly  
 277 expected social interactions to increase in frequency while becoming more positive over time.  
 278 However, some people, especially those without much dog experience, commented that they

279 were unsure how other people would respond to the dog socially. When asked to elaborate  
 280 they commonly commented that people might be more interested in the PR, as this normative  
 281 expectation demonstrates: “They say if you have a dog within the school area, that increases  
 282 people talking to you and asking about your dog” (PR5). Assistance dog instructors supported  
 283 this claim as well: “The one big benefit that she will see immediately will be with people  
 284 wanting to interact with her [...] having the dog as a social lubricant, it’s going to open up a  
 285 lot of social interactions” (ADI7).

286         Additionally, many PRs currently had limited communication opportunities and/or  
 287 poor clarity in speech. As dogs are known to be social catalysts, the assistance dogs were  
 288 expected to increase PR’s communication ability and quantity through public interactions.  
 289 One parent, for example, expected the clarity of her son’s speech to improve through  
 290 passionately talking about the dog: “I think it will encourage him to have more  
 291 communication, and because of his facial muscles people can’t understand him. But I hope it  
 292 will encourage him to talk to people [...] because he will be really passionate about it” (P8).  
 293 Another parent expressed similar expectations as she had experienced her own companion  
 294 dog acting as a social catalyst. Communication was also expected to become more assertive  
 295 through the need to enforce the rules and public access rights assistance dogs have; however,  
 296 initially this was expected to be a challenge due to anxiety.

297         A final social benefit pertained to others and ranged from relieving minor  
 298 inconveniences, to major expectations that the dog would relieve excessive burden and  
 299 responsibility. These benefits mainly focused on the family and, most commonly, the parents.  
 300 By having the dog, PR’s looked forward to not needing people in their environment to fulfil  
 301 certain needs that they have, especially physical. Similarly, the dog was expected to reduce  
 302 the work load of other people, but most importantly reduce their stress: “we live at a level of  
 303 stress that the body just can’t sustain, it can’t, and so for me it will take a bit of that away I  
 304 hope” (P4).



### 305 *Expected Challenges*

306       Expectations regarding potential challenges were often unformed and less likely to be  
 307 talked about spontaneously. Following prompting, PRs and their family members often began  
 308 by saying “I don’t know” or taking a long pause to think about challenges they expected.  
 309 When challenges were identified, the participants often had a plan in place to overcome these  
 310 or assumed their assistance dog training organization would provide assistance to do so.  
 311 Challenges were predominantly physical or social in nature.

### 312 *Physical*

313       Physical challenges included learning dog behaviour, working with the dog, and  
 314 establishing a routine. Especially for PRs new to living with a dog, learning dog behaviour  
 315 was expected to be a challenge. Even amongst those who had lived with a dog previously,  
 316 concerns were raised regarding role differences between an assistance dog and other pets.  
 317 One instructor described a concern her client had regarding general dog behaviour:

318       “[The dog] was asleep on his lap and he was saying ‘what’s wrong with her, she’s not  
 319 moving’, and we were saying ‘look she’s breathing, look at her tummy going up and  
 320 down, she’s actually really relaxed.’ So that’s going to be probably something for him  
 321 to get used to, is that the dog will not move all the time, the dog will sleep.” (ADI2).

322       For some participants the physical requirements of having a dog and learning how to  
 323 work with the dog were expected to be a challenge, including: lung capacity, depth of  
 324 emotion, speech clarity and speed, timing of rewards, and strength and size of the dog  
 325 compared to the PR. Overall these issues were not too concerning for participants, as the  
 326 organizations were expected to match the dog to the client on physical qualities and  
 327 temperament. They were also expected to provide enough information for the network of  
 328 carers so that they did not feel unprepared for the dog.

329       When learning to work with the dog, another important concern mentioned by one  
 330 instructor, was shifting the concentration to the dog: “One challenge that all recipients have is

331 to remember dog first, person second. In other words, when they meet someone, they have to  
 332 sort out what the dog is doing, the dog's safety, before they start engaging the person."

333 (ADI3). This shift in focus was also true for establishing a routine.

334 The success of the handler-dog relationship was expected to be initially dependent  
 335 upon the PR's acceptance of a new dog-centred routine. For some PRs, routine was used to  
 336 minimize anxiety, so changing this to accommodate the dog was expected to pose an initial  
 337 challenge. After the initial period, however, it was expected that the PR would become used  
 338 to the new routine, resulting in reduced anxiety and an overall beneficial outcome:

339 "I think it's going to be very intensive for him, so it's his responsibility. I know he is a  
 340 late riser, so usually he will wake up and might stay there for half an hour in bed, and  
 341 then he will need to go out for a walk with his dog, which may change his routine at  
 342 the moment and he might find it not easy. We have clients that find it very  
 343 demanding, but in the end it is worth it, it helps. In the long run it's very important,  
 344 very, very helpful, but maybe for the first period, when the dog moves in, they will  
 345 find it difficult" (ADI1).

346 On the other hand, for PRs who are less dependent on routine, the ability to continue the  
 347 routine required by the dog caused some concern. One parent believed there was potential for  
 348 the novelty of having the dog to wear off and maintaining responsibilities like feeding would  
 349 be a struggle.

### 350 *Social*

351 Social challenges involved changes in family dynamics, integration of the dog into  
 352 their life, other people's understanding of assistance dogs and social or cultural attitudes  
 353 towards assistance dogs. The introduction of the dog into the family was expected to shift  
 354 family dynamics and some relationships with companion animals. Some PRs expected this to  
 355 be more stressful and challenging than others.

356 As PRs and their family members knew each other well, they tried to predict  
 357 realistically what would happen, yet uncertainty still existed. For example, uncertainty

358 regarding how other members of the family would respond to the dog or accept not being  
 359 able to interact with the dog as much as they would like, was evident. For one family,  
 360 adapting to having a dog around was expected to be a challenge because of the extreme views  
 361 different members of the family had toward dogs:

362       “The second daughter who’s 18 hates animals, [...] so she barely tolerates the cats as  
 363 it is and is not happy about us getting a dog, but understands that [PR6] needs a dog,  
 364 so it’s toleration rather than anything else. The eight-year-old is very excited but [...] I  
 365 think there will be a little bit of jealousy on the part of the eight-year-old. My  
 366 husband is not particularly keen on animals either, but in a perfect world we wouldn’t  
 367 want a dog, but it’s not a pet, it’s a service animal for [PR6]” (P6).

368       Integrating the assistance dog into the PR’s daily life at their current day program,  
 369 group home, or school was also expected to be a challenge, irrespective of how good the  
 370 current relationship with the administrators was. Participants expected there to be many  
 371 challenges in integrating the assistance dog into these new environments as they are less  
 372 controlled, compared to the home. Even with assurances from the organization, PRs still felt  
 373 anxious:

374       “P1: [PR1’s] a little anxious about when the dog moves in, and he’s lost it a few times

375       PR1: because I don’t know what everyone else is going to think!

376       P1: yeah, so that’s the anxiety at the moment, and I think closer to when the dog  
 377 comes...

378       PR1: well, what’s going to happen with [the day program]? What’s going to happen?”

379       Adding to the anxiety, family members reported that the day programs/group  
 380 homes/schools had many concerns about allowing a dog on their premises. For each PR, they  
 381 will be the first to have an assistance dog at these locations and sometimes the PR was  
 382 required to provide extra precautions before the dog would be allowed to attend.

383           A prominent concern in these situations was the number of people that would have the  
 384   ability to interact in an authoritative role toward the PR. This was expected to create  
 385   challenges as people in authoritative roles may not know what to do with the dog, yet try to  
 386   take control:

387           “The hardest part of her moving there is for the staff and the residents not to interfere  
 388   too much because they will want to pat her and they’ll want to make a fuss of her and  
 389   this is really a crucial time where we really prefer they didn’t do it” (ADI2).

390           For some PRs, the success of the implementation of the dog into the PR’s daily life  
 391   was expected to rely heavily on the support provided by the family, especially the mother:  
 392   “As much as [ADI2] and the manager have told me they will be involved, and will take care  
 393   of it, I know it will rely heavily on me, because it just does, with everything you do with  
 394   these organizations” (P2).

395           Community education was another common concern for participants, especially for  
 396   PRs with lesser known types of assistance dogs or whose community was perceived to be  
 397   ignorant of assistance dogs. For one PR, it was known that he would be the only person in his  
 398   small town with an assistance dog and, subsequently, he predicted that he would have to  
 399   educate the community. To combat this, another PR had a plan to educate the community  
 400   about her assistance dog through Facebook and speaking at her son’s school assembly about  
 401   her dog, where she volunteers.

402           Additionally, being denied access was another common concern. One PR believed  
 403   that other people would not think her type of assistance dog was ‘real’ since the effects of her  
 404   disability were variable and not always obvious to others:

405           “I think I’m probably more worried about it than I should be. She’ll be all geared up  
 406   and she will look like a professional assistance dog. I think it’s more that people are  
 407   so used to seeing seeing-eye dogs that any other type of assistance dog they’re like  
 408   ‘What? Sorry? Does that even exist?’ And then they are not used to it so it doesn’t



409 [exist]. They are like if it's a guide dog that's okay but if it's not, it's not okay."  
 410 (PR6).

411 PRs who had some experience working with an assistance dog in the community had  
 412 often already experienced challenges regarding cultural differences in attitudes towards dogs  
 413 and tended to expect these, whereas they were not expected by individuals without prior  
 414 experience. Cultural differences were viewed as a challenge within a group home  
 415 environment, for example, because many carers come from cultural groups that consider dogs  
 416 differently (e.g. unclean). One parent described a time when the dislike expressed by a carer  
 417 hindered the carer's ability to do his job. This concern was also shared within a school  
 418 community. However, in this case, the parent already had a strategy to confront the cultural  
 419 challenges they expected to encounter:

420 "One thing the school is going to have to do is contact the relevant families and say,  
 421 'look this is not a pet, this is a medical aid for this child. Are you okay with the dog  
 422 being in the classroom with your child?' If not, they will have to move those children  
 423 to other classes" (P4).

424 The instructors typically reported that the organizations were working to minimize these  
 425 challenges.

## 426 Discussion

427 The current study aimed to examine expectations regarding acquisition of an  
 428 assistance dog, on the basis that recognising unrealistic expectations and fostering more  
 429 appropriate ones might lead to more positive outcomes. Eight case studies were investigated,  
 430 whereby potential recipients (PRs), their immediate family members/carers, and the  
 431 assistance dog instructors were interviewed. Participants expected PRs to receive diverse  
 432 benefits but also to experience several challenges. These were subdivided into physical,  
 433 psychological and social categories.

434           A majority of expectations appeared to be influenced by previous experiences with,  
 435   and knowledge about, assistance dogs in general and their dog specifically. These  
 436   expectations appeared to develop through accumulation of relevant experiences with their  
 437   provider organization, as has been reported in other studies (Dohnhammar, Reeve, & Walley,  
 438   2015). Similarly, participants' personal experiences with companion dogs also seemed to  
 439   influence expectations for their assistance dog. Often this led them to believe, sometimes  
 440   with certainty, that their dog would provide benefits, especially related to companionship,  
 441   increasing positive emotions, increasing social interactions and decreasing anxiety.

442           Supporting our participants' expectations, many studies have shown that dogs can  
 443   provide such benefits (Andreassen, Stenvold, & Rudmin, 2013; Dotson & Hyatt, 2008; Stern  
 444   et al., 2013; Yount, Ritchie, Laurent, Chumley, & Olmert, 2013). Since many of the expected  
 445   benefits have been identified as actual benefits in other studies, they appear to be reasonably  
 446   realistic. This is preferable to idealistic expectations which represent people's desires,  
 447   preferred outcomes and what they want to happen (Thompson & Sunol, 1995) and which  
 448   may be more likely to lead to unmet expectations and dissatisfaction (Porter & Steers, 1973).  
 449   Therefore, understanding that ideal expectations may be unrealistic is important. This is not  
 450   to say that idealistic expectations were never apparent, as participants often seemed to believe  
 451   that the things they wanted to happen, would happen. These expectations were emphasized  
 452   by using assertive ways of describing or affirming, for example, that "every time he will be  
 453   able to...". Retrospectively, some studies have noted handlers' disappointment in their dog's  
 454   behaviour and the outcomes of their trained abilities (Davis et al., 2004; Rintala, Matamoros,  
 455   & Seitz, 2008). This dissatisfaction may have resulted from expectations being too high  
 456   initially. However, in the assistance dog literature, unmet expectations have not received  
 457   much attention.

458           Besides prior experiences, expectations are also based on cognitive and affective  
 459   states (Thompson & Sunol, 1995). It appears that participants' idealistic expectations were  
 460   dominated by affective states, whereas predicted and normative expectations were less

461 emotionally driven and instead based on information from the organization or previous  
462 experiences. In health care contexts it has been suggested that affective states contribute  
463 significantly, and may be of greater importance than, cognitive evaluation (Thompson &  
464 Sunol, 1995). Receiving an assistance dog appears to be highly emotionally driven, as it was  
465 commented as being a last resort or final option for many of our participants.

466         Both ideal and unformed expectations could result from participants' limited  
467 experience with assistance dogs. Sometimes, when prompted, participants commented on  
468 their lack of expectations in certain areas or expressed an inability to explain their  
469 expectations because of their current inexperience with assistance dogs. These instances  
470 represent unformed expectations, which are those that participants are unable or unwilling to  
471 explain. This could be due to not having any expectations or that they found it difficult to  
472 express their feelings, potentially due to fear or anxiety (Thompson & Sunol, 1995). The  
473 interview structure hindered our understanding of unformed expectations as the participants  
474 were free to talk about what they expected to happen; therefore, it is understandable that  
475 limited information would be provided about unformed expectations.

476         When prompted, however, unformed expectations mainly arose within areas directly  
477 outside of the participant's immediate control (e.g. expectations of social interactions). One  
478 of the most prominent areas for participants to expect challenges involved the expected  
479 fluidity of transitioning the dog into the PR's daily life, such as school, day programs, and  
480 community housing. Most of the associated challenges stemmed from a perceived lack of  
481 education in these areas. Although many interviewees expected challenges, especially in the  
482 short term, they often had plans in place to overcome these challenges or were willing to  
483 work through the expected challenges with guidance from the organization. This willingness  
484 to learn is important as it shows determination and commitment to a successful human-dog  
485 partnership, at least in principle.



486 *Implications for assistance dog organizations*

487           Not surprisingly, participants heavily relied on information provided by their  
 488 assistance dog organization in forming their expectations. Participants often alluded to this  
 489 information or sometimes explicitly referred to the organization when they stated things like  
 490 “the manager has told me...”. These influences were commonly represented through  
 491 normative expectations, which are those that participants think should or ought to happen.  
 492 They are often equivalent to what recipients were told or led to believe (Thompson & Sunol,  
 493 1995). Therefore, organizations should carefully consider the information they provide their  
 494 clients.

495           Subsequently they should also make sure that their client’s expectations are realistic.  
 496 Since expectations are capable of change (Bialosky et al., 2010) and can continually change  
 497 (Locker & Dunt, 1978), organizations should aim to amend unrealistic expectations and assist  
 498 in modifying them to establish realistic baseline expectations with their recipients (Bialosky  
 499 et al., 2010) prior to receiving their first assistance dog. Organizations can also monitor and  
 500 alter expectations, if necessary, throughout the acquisition process. This could involve  
 501 probing participants who report unrealistic expectations and helping them to develop realistic  
 502 expectations, potentially resulting in increased satisfaction (Ginzberg, 1981). Realistic  
 503 expectations should help to minimize disappointment or conflict if the PR or family’s  
 504 expectations are not met. This is because expectations have been shown to be an important  
 505 mediator of outcomes for many clinical and disability areas (Bialosky et al., 2010).

506           These results demonstrated variability in the expectations people have before  
 507 acquiring an assistance dog, which is important for assistance dog organizations to  
 508 understand. By understanding and catering for both the expected benefits and the expected  
 509 challenges, organizations can tailor client services and develop evidence-based practices.  
 510 However, the primary purpose, or concern, of the provider organization, is to meet the PR’s  
 511 needs, not necessarily their ideal expectations. Therefore, organizations should be aware of  
 512 their client’s expectations to address them if possible or manage if not. Many of the expected

513 benefits represent wants or desires and were not directly related to the participant's disability  
 514 or medical needs. Therefore, ensuring these are practical, rather than aiming to fulfil  
 515 unnecessary demands, may be of critical importance (Thompson & Sunol, 1995).

516 It is also critical for organizations to attempt to minimize the challenges that  
 517 participants expected. One of the most prominent areas for participants to expect challenges  
 518 involved the expected fluidity of transitioning the dog into the PR's daily life, such as school,  
 519 day programs, and community housing. Most of the associated challenges stemmed from a  
 520 perceived lack of education in these areas. Therefore, organizations should explore the  
 521 possibility of training within and educating various areas of the PR's community on etiquette  
 522 about assistance dogs prior to the dog's arrival to minimize the stress and anxiety that the  
 523 PR's and their family felt.

#### 524 *Limitations and future directions*

525 While this study was successful in exploring expectations prior to acquisition of an  
 526 assistance dog, a few limitations should be acknowledged. Although our participants were  
 527 more representative of the population involved with acquisition of a service dog than what  
 528 has previously been reported, due to the relatively small number of participants it is possible  
 529 that we did not reach the saturation point, where we were no longer acquiring new  
 530 information. Similarly, acquiring more information from PRs for each type of assistance dog  
 531 would assist to determine any differences in expectations for these populations. Member  
 532 checking of developed themes was not conducted with the participants, as this is the first  
 533 component of a longitudinal study and we did not want this information to impact any future  
 534 interactions with the researchers. Instead, peer debriefing was used between the authors to  
 535 increase the credibility of the codes created (Guba 1981). Many of the subthemes presented  
 536 here, especially challenges, will be explored further to determine their validity and  
 537 importance in future studies. Another limitation was due to the short duration of the study,  
 538 which meant we were unable to determine the impact, if any, that expectations had on  
 539 outcomes. A follow-up study is currently underway and will be reported separately.

## 540 Conclusion

541 This study investigated the expectations that PRs and their family members or people  
 542 close to them had regarding acquiring an assistance dog. This also included perspectives from  
 543 the dog training instructors. The findings suggest that PRs were expected to receive many  
 544 benefits. Previous experience with companion dogs influenced expectations, as did  
 545 information provided by the organization. However, participants also expected many  
 546 challenges, which often reflected prior experiences they had with dogs and uncertainties in  
 547 the dog's ability. It is important for the growing assistance dog industry to better understand  
 548 the expected benefits and challenges that PRs, and other influential people in their life, have  
 549 prior to receiving an assistance dog. This will assist organizations to minimize conflict,  
 550 disappointment and unforeseen challenges resulting from unrealistic expectations.

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673

## 4.2 Further discussion

The aim in this chapter was to determine the expectations of prospective AD recipients, their family members, carers and the AD instructors, regarding the acquisition of an AD for a first-time handler. The previous paper demonstrated that participants expected prospective recipients to experience many benefits and some challenges when acquiring an AD. This was expected as some participants had paid USD 30,000+ to receive an AD. With a high monetary incentive, expectations for positive outcomes could increase (Schmidt, Skvortsova, Kullen, Weber, & Plassmann, 2017). Although not every prospective recipient had to pay for their AD (some were donated or funded through other means), all participants knew the monetary value of the AD. This may have contributed to participants' positive expectations for the AD to assist the prospective recipient to live their best life.

Potentially also due to this high financial investment, participants, especially parents, were willing to go to extreme lengths to make the AD-handler relationship work and minimize the challenges that handlers may experience. The challenges could potentially decrease the prospective recipient's ability to live their best life. Identifying challenges established that many participants had already thought about how to overcome them, a beneficial quality which demonstrated motivation to make the relationship work despite possible setbacks. Participants commonly believed that with appropriate support, especially from their AD organization, prospective recipients should be prepared for and will overcome these challenges.

Therefore, support from the AD organization appeared extremely valuable. As these handlers had a range of experiences, including one having lived with an AD (for

their mother), to multiple never having lived with a dog, the AD organizations were responsible for preparing their clients for an AD. The organizations involved in this study had various methods to accomplish this. Two AD organizations involved in the case studies provided prospective recipients with formal education and experiences working with a trained AD before receiving their own, one organization did not. AD organizations who provided experiences did so through a weekend training camp or weekly training sessions that were conducted over a year. These experiences were aimed at providing prospective recipients an opportunity to work with and learn about ADs. Providing these opportunities was beneficial as AD organizations could control the experiences and information prospective recipients were receiving.

In neither case did parents, carers, or other individuals receive the same experiences and information as handlers. This led to some discrepancy in understanding about ADs, as family members and carers were often reliant on relayed information from the prospective recipient. This discrepancy in knowledge about ADs may have contributed to differences in expectations. As these individuals were expected to be highly involved in the integration of the AD into the handler's life, they should receive the same education and training as the prospective recipients. Experiences such as the training camps or weekly training sessions were important for me to understand to contextualize the prospective recipients' later experiences.

By understanding individual's expectations, AD organizations have the opportunity to amend unrealistic expectations, which could minimize discouragement for their clients if the expectations do not eventuate (Gonzalez Sáenz de Tejada et al., 2010), and produce more positive outcomes (Cmar, 2015; Cormier, Lavigne, Choinière, &



Rainville, 2016). One AD organization recognized their need to understand their prospective recipients' expectations further, especially with a population of adolescents (under 18 years of age), who had typically been restricted from receiving an AD due to their young age. To increase the organization's understanding of their expectations, I was invited to attend and observe a weekend camp, during which I conducted a qualitative investigation to synthesize the perceptions of four attending adolescents, their parents and instructors from this AD organization. This study revealed that the traditional conceptualization of ADs for adult handlers might not be appropriate for adolescent handlers. However, many benefits and challenges that adolescents were expected to receive could influence their ability to live and work with an AD successfully. For further reference, Appendix D presents this paper.

### **4.3 Summary**

The paper presented in this chapter explored various themes involving the benefits and challenges that first-time handlers expected to experience when they received their AD. The training and information provided by the AD organization influenced many of these expectations. Although some individuals received little prior training, the expected benefits and willingness to work through the expected challenges were promising. To understand how these expectations eventuated and how the prior knowledge and experience from the training contributed to the first-time handlers' experiences initially working with their AD, further understanding was needed. The next chapter reports interviews with prospective recipients, now referred to as handlers, one month after they received their dog, to reveal their experiences during the placement period.

## **CHAPTER 5: Experiences transitioning an assistance dog into a handler's daily life**

The findings presented in the previous chapter reflected the expectations of prospective recipients, family members, carers and AD instructors, who were intimately involved in the process of acquiring an AD. This chapter expands upon the work presented in Chapter 4 by exploring prospective recipients' reactions and experiences living and working with their AD during and just after the placement period. Prospective recipients are now referred to as "handlers," to reflect a relationship change with the AD after the placement period. The placement period was considered to begin the moment the AD was handed over to the handler and typically extended until an intensive initial training period with the AD organization was complete (as deemed by the organization). This period was extremely intensive for all handlers. Different AD organizations had varying timeframes for placement, but they collectively considered this period critical to understand the development of the handler-dog relationship. Prior literature rarely discusses this period. The research presented in this chapter, therefore, aimed to gain a better understanding of handlers' initial experiences during the transition period, including learning to work with and integrate the AD into their lives.

The transition experience was discussed in detail with the handlers and their support networks. The benefits handlers reported experiencing at this time are reported next. The challenges they reported experiencing had never been reported in the literature and was therefore published in *Disability and Rehabilitation* in May 2019 titled "The experience of acquiring an assistance dog: Examination of the transition process for first-time handlers." After this, a brief discussion of

participants' expectations and what AD organizations should do to prepare their handlers to receiving an AD is provided.

### **5.1 Relationship benefits experienced during the transition period**

One month after receiving their AD, interviews were conducted with handlers (depicted as 'H' and the constant case study number used throughout this thesis) which employed the same methods presented in the previous chapter. During the interviews, handlers described benefits that their dog had started to provide them, many of which validated reported benefits from other AD studies and from the presence of a dog, as discussed in Section 2.1. It was expected that many trained benefits would be apparent immediately; however, benefits that arise from the relationship could take longer to form. This study demonstrated the early presence of the relationship benefits.

The AD-handler relationship is vital to develop early because this relationship is potentially more important than the tasks an AD performs (Camp, 2001; Kwong, 2008). This relationship is often described as intimate (Sillaby, 2016), dynamic (Hart, Zasloff, & Benfatto, 1995), supportive (Turner, 2006), interdependent (Kwong, 2008) and symbiotic (Dotson & Hyatt, 2008), emphasizing the close and mutual benefit received through this partnership (Dotson & Hyatt, 2008). These descriptors demonstrate some of the positive attributes commonly associated with these relationships and closely matched the participants' descriptions.

The success of the AD-handler team may rely on establishing and maintaining a good relationship (Lane et al., 1998). Handlers who had a strong relationship with their dog may have perceived them to provide well-known benefits such as companionship (Rintala, Matamoros, & Seitz, 2008; Wiggett-Barnard & Steel, 2008)

or positive energy (Yount et al., 2013). These emotional benefits are commonly described in AD literature (Crowe et al., 2018), the broader HAI literature (Kruger & Serpell, 2006), and were commonly reported by handlers. For example, H5 was extremely pleased with the companionship he received: “if I get a little lonely, then he can be there for me. Someone to cuddle up to and have a bit of a play, and then I can go for a walk, because I enjoy that.” These benefits were expected, and all handlers shared similar sentiments. One of the main expectations H3 reported before receiving her AD (refer to the previous paper) was the positive energy a dog would provide her. This was one of the first and most valuable benefits she received from her AD. H3 described this as: “it's great in the morning to have happy dog energy licking your face!” All handlers reported receiving companionship benefits and increasing positive emotions or energy when with their AD.

The handlers in this study and those in the AD literature commonly reported loving their dog and believing that their dog loves them (Garrett, 2007). This potentially occurs even when handlers behave in a way that they perceive would make other humans not love them (Stern et al., 2013). The belief is reinforcing for the individual (Van Houtte & Jarvis, 1995) and can bring out positive emotions (Steinbeigle, 2017), such as joy when with a dog (Ikenaga, Sakai, Sakurai, & Takayanagi, 2019; MacKinnon, 2014). This was demonstrated by H2, who commonly said: “I love [my AD], I love having [my AD], she makes me happy.” The positive emotions that arose from the handler-dog relationship have the potential to broaden an individual’s exploration and awareness towards different thoughts and actions they may not normally consider and enable other benefits, such as improved wellbeing (Fredrickson, 2001).

Developing a strong, healthy AD-handler relationship early likely influenced the personal development benefits reported at this time as well. Participants reported handlers were experiencing increased motivation: “he motivates me to get outside and enjoy life” (H5), confidence: “he is starting to get a bit more confident” (P1), independence: “it makes me feel so much more independent sometimes” (H7), responsibility: “I’ve got her to take care of, and she depends on me to feed her” (H3) and developing a sense of achievement: “[working with my AD] makes me feel like I have achieved something real good” (H5). These benefits were important to a handler’s personal development and ability to live their best life.

The AD-handler relationship was also meaningful because it has been perceived to extend beyond a working relationship (Lane et al., 1998). This is unique, as for the most part, this type of relationship cannot be developed with assistive technology and is not developed with carers. While there is potential for individuals to form relationships with carers that may have some of these qualities, overdependence on a carer is common (Davis, 1980) and can make a person with disabilities feel powerless (Morris, 1997). Highly dependent relationships with dogs are not perceived as negatively (Pemberton, 2019). Instead, these handlers perceived that their ability to have control within the relationship led to positive personal development qualities:

“[I have] a sense of independence in managing [my AD]. She is more my responsibility, and I am in control and in charge. It's for me to give the commands. I think when you've got a disability, you get used to people stepping in and doing stuff for you because that's what they feel compelled to do, to help. Whereas [with an AD], it's actually up to me to maintain all of the stuff that needs doing, so that has a really good benefit” (H3).

Compared to the emotional benefits which were received by everyone, the personal development benefits were prominent for some handlers, but emerging for others. Independence, for example, was demonstrated through the ability to work independently with their dog. Some AD organizations required the handler to demonstrate independence in caring for the dog before completing the placement period, which ensured the welfare of the dog. However, other handlers were still developing independence as they received much support from their care network. For example, P2 recognized this: “so at this stage [working with the AD] hasn’t increased any independence. Whether it will in the future, maybe.” Overall, participants reported that handlers received different amounts of these benefits at this time. These differences could be due to the challenges experienced, which will be discussed next.

## **5.2 Paper 4: The experience of acquiring an assistance dog: Examination of the transition process for first-time handlers**

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## The experience of acquiring an assistance dog: examination of the transition process for first-time handlers

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RESEARCH PAPER



## The experience of acquiring an assistance dog: examination of the transition process for first-time handlers

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### ABSTRACT

**Purpose:** As the popularity of using dogs to assist individuals with disability grows, there is a need for increased understanding of assistance dog handlers' experiences of living and working with their dog. This is particularly pertinent to first-time handlers and during the initial placement period, where the handler and assistance dog, and the relationship forming between them, may be extremely vulnerable. The aim of this study was to better understand first-time assistance dog handlers' experience of the placement period, especially any challenges that they experience.

**Materials and methods:** Semi-structured interviews were conducted with two youth and five adult handlers, and one parent of a young handler, recruited from three Australian assistance dog organizations. Interviews were conducted 1 month following the initial acquisition of an assistance dog. Meleis' transitions theory was used to develop a better understanding of the transition process for first-time handlers.

**Results:** Inductive content analysis identified various challenges that first-time handlers experience throughout the transition period. These included: the initial response to living with the assistance dog; renegotiating relationships and social interactions; and, adjusting expectations regarding the assistance dog's behavior and capabilities.

**Conclusion:** First-time handler experiences indicate a need for assistance dog organizations to develop initiatives to further assist their handlers through a smooth transition into assistance dog ownership.

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### ► IMPLICATIONS FOR REHABILITATION

- Integrating an assistance dog into a first-time handler's life is a long process full of challenges.
- Provider organizations and other support members markedly impact the ease of transitioning an assistance dog into a handler's life.
- Organizations should be aware of the role they have and employ strategies to create as smooth a transition as possible.
- Support from other support members is crucial to ease the challenges experienced.

### Introduction

Significant life changes often require major life transitions [1]. A transition is defined as "a passage from one life phase, condition, or status to another" [2, p. 239]. It refers to both the process and outcome involved in the interaction between an individual(s) and changes in their environment, relationships, or health. Psychological processes are implied in adapting to the change, rather than returning to a preexisting state [3,4].

The assistance dog literature recognizes the role of assistance dogs in providing long-term life-changing benefits for handlers [5–7]. However, this literature, to date, has predominantly focused on retrospective accounts, obtained after a period of 6 months or longer [8–11]. There is minimal research documenting the handlers' experiences at the time of receiving and adapting to having an assistance dog in their lives.

The aim of this paper is to better understand the transition involved with the placement period as experienced by first time assistance dog handlers. A typical placement period is described and relevant literature briefly introduced. Meleis' transitions theory is then described as a conceptual framework to facilitate understanding of the placement period. The presented research involved interviews

conducted with first-time assistance dog handlers to gain their perspective 1 month after receiving their assistance dog. These data are presented and discussed in relation to the transitions theory.

### The placement period

In the assistance dog context, the placement period refers to the time when a handler and assistance dog are first living, learning, working and training together extensively. It is considered instrumental to the development of the handler-dog relationship and crucial to minimizing risk or harm to the assistance dog [11]. The traditional placement period is not standardized and can range from 1 week to a few months, depending on the provider-organization's training process [12]. The International Guide Dog Federation and Assistance Dogs International, are prominent regulating bodies which oversee member organizations worldwide and provide some guidelines on the length of the process. Assistance Dog International members, for example, are required to work with a new dog-handler team for a minimum of 6 months in a variety of settings and situations [13], though the intensity of interactions with the handler is not regulated. Often, interactions gradually reduce to as few as one follow-up

interaction per annum. Assistance Dog International and International Guide Dog Federation affiliated organizations may have additional guidelines supplementary to those provided by these regulating bodies, which may or may not be accessible to the public. Many other organizations are not members of these regulating bodies and their processes are largely unregulated.

Depending on the provider, it can be mandatory for prospective assistance dog recipients to reside at or near an organization's facility for a period of time, most commonly 5 days–2 weeks [14–16]. This allows an instructor to provide training and oversee the workings of the new team [17]. Training courses may include multiple first-time assistance dog handlers [14] and often require full-time participation [18]. Steele has reported that handlers can become overwhelmed by the amount of information provided [6] as they must learn about their dog's individual behaviors and the commands used to control these behaviors, and simultaneously put these into practice. They must also learn to understand the rights and responsibilities associated with being an assistance dog handler, and how to integrate the assistance dog into their life. A typical timeline for receiving an assistance dog is depicted in Figure 1.

The integration of an assistance dog into a handler's life can be an exhausting [18] and slow process [10,19]. It typically culminates in the handler passing a public access test [18], which allows handler-dog teams to access public facilities. Some organizations are willing to extend the placement period for as long as the dog-handler team needs to prepare for the test. Additionally, some organizations begin preparing their clients to work with an assistance dog, prior to the acquisition of their own dog (as indicated in Figure 1). This might include weekly training sessions for first-time handlers over a period of months or even a year. This less common approach typically uses an already trained assistance dog as a model and handlers receive weekly training sessions, often in their home and community, to help teach the handler about assistance dogs prior to the placement period.

### Existing research involving the placement period

Differences in handler experiences between approaches are largely undocumented, as organizations do not normally conduct formal assessments with their clients during the placement period. This is potentially due to the intensity of this period and a reluctance by organizations to overwhelm their clients further [20]. A small number of studies have been conducted which explore various changes the handlers perceive from a time before they received their assistance dog to sometime after, often through the use of surveys. This, however, does not provide insight into the handlers' experiences of the transition process itself.

One study by Guest et al. evaluated and found significant differences in measures of wellbeing prior to and after placing hearing dogs. Data were collected at five-time points: the beginning and end of the waiting period, at the end of the 5-day placement period, and three and 14 months after receiving the dog. Of the

three questionnaires used in the study: Profile of Mood State, General Health Questionnaire and a Hearing Dog Questionnaire, only the first was administered at the end of the placement period. At this time, handlers were found to have significantly less depression and overall mood disturbance than before they received their dog. They also showed less confusion 3 months after acquisition compared to at the end of the placement period [16].

Another study by Vincent et al. aimed to evaluate the effectiveness of assistance dogs for veterans with PTSD. They used a repeated measures design involving five validated questionnaires: Pittsburgh Sleep Quality Index, Post-traumatic Stress Disorder Checklist for military, Beck Depression Inventory, Brief World Health Organization Quality of Life Questionnaire and the Life Space Assessment. These questionnaires were provided to veterans at six, three and zero months prior to acquiring an assistance dog and again 3 months after acquisition. Preliminary results indicated that there were positive effects on sleeping, post-traumatic symptoms and depression, but no change in the quality of the handler's life or involvement within the community [12]. However, there was no data collection between the very beginning of the placement period and 3 months after the acquisition of the assistance dog, thereby limiting our understanding of the transition.

Two other related qualitative studies explored the relationship and behaviors exhibited between an autism assistance dog and the handler/family. Burrows et al. collected behavioral observations and interview data during the placement period. However, these data were not analyzed separately or compared to later time points, which occurred every 3 months for a period of 6 months to a year after acquisition [10,11]. They concluded that there were many benefits from the assistance dog, including improving quality of life for the child with autism spectrum disorder and the family.

One final study, reported in a PhD thesis, focused the most on the placement period, as the authors were interested in the effects of one organization's intensive 3-week group training program and the psychiatric service dog on PTSD symptoms for 12 veterans [21]. Their participants completed the Post-traumatic Stress Disorder Checklist, Post-deployment Social Support Scale, Quick Inventory of Depressive Symptomatology, Posttraumatic Cognitions Inventory, Quality of Life Scale, Dimensions of Anger Reactions-5, and an attention bias task. Measures were taken 1 month prior to the placement period, during the first day and at the end of each week of the placement period, and 6 months post-acquisition. This study reported significant decreases in PTSD, anger and depression symptoms with increases in social support and quality of life immediately after the placement period and these results persisted at the 6 month follow up [21]. However, the results are limited because they attempted to understand the effects of both group training and the assistance dog together.

These preliminary results are intriguing and merit further study with different types of assistance dogs and handlers, because they show that the placement period may be the beginning of

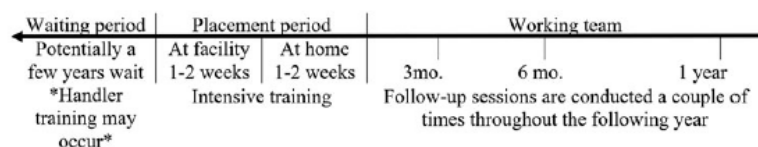


Figure 1. Depiction of a typical timeline of the process to acquire an assistance dog. These time frames are variable depending on the provider organization and the handler.



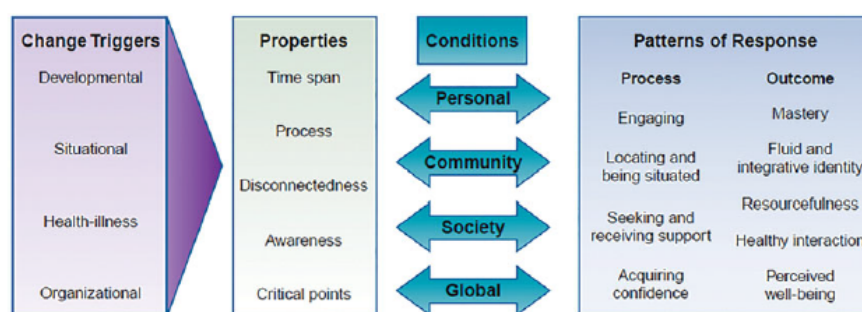


Figure 2. Diagram of the transitions theory components. Adapted from Smith M, Parker M. *Nursing theories and nursing practice*. 4e. Philadelphia, PA: F.A. Davis Company; 2015 with permission.

the life-changing effects assistance dogs can provide their handler [5–7]. Specifically, the time immediately after the placement period should be explored further. To our knowledge, the presented studies are the extent of the literature that non-retrospectively investigates the placement period.

### Conceptual framework

The concept of transition, as employed in this paper, draws on its established use in nursing literature, which articulates the importance of understanding the transition process and the role nurses have in facilitating successful transitions throughout life [22]. Meleis' transitions theory was developed as a middle-range theory for nursing studies and provides a framework to better understand transition experiences before, during and after a change [23]. The theory has four main components: change triggers, properties, conditions and patterns of response, as seen in Figure 2. Not discussed here is the impact of interventions on this process, due to the longer-term nature of that theoretical component. This theory is applicable to the assistance dog context because it exemplifies many elements which could be influential in the placement period experience, and may ultimately assist organizations to facilitate the transition through developing evidence-based practices.

The first component, 'change triggers,' involves understanding the characteristics of the change, often precipitated by an external event. A transition, however, is an internal process. There are four types of change triggers: developmental (e.g., age), situational (e.g., admission to hospital), health-illness (e.g., a diagnosis) and organizational (e.g., new employee).

The second component involves understanding the 'properties' of the transition. This includes the time span the transition occurs within (often longitudinal), the dynamic and fluid nature of the process, the experience of disconnectedness from what is known and familiar (feeling an incongruity between past, present and future expectations of the change), having awareness of the change, and identifying milestones or critical points (which involves overcoming a turning point or a hurdle) throughout the transition. These are described to assist in anticipating or predicting outcomes of a change trigger.

Third, this theory explores the influence that 'conditions of transition,' have on individuals. The conditions may be observable and functional or not. This includes personal, community, societal and global conditions, which can affect both 'properties' of the transition and 'patterns of response.'

The final component, 'patterns of response,' refers to understanding how individuals respond to a turning point [23]. This

involves two domains: process and outcomes. Process involves the level of engagement an individual has with the transition process, including: recognition of one's location and being situated in supportive relationships, seeking and receiving support from others, and acquiring confidence in dealing with new or conflicting demands related to the transition. Outcomes involve a sense of mastery related to the change, experiencing a fluid and integrative identity by being able to move between identities throughout the transition process, having healthy interactions, especially with relationships, and a social network and perceived well-being. All these areas are important to better understand how individuals respond to a change event.

Meleis' transitions theory is applicable to better understand the transition experiences of first-time handlers when acquiring an assistance dog because of the way that an assistance dog moving into the home fundamentally changes the family dynamic and disability-related outcomes. These constructs supported/guided the discussion of the present study, where the aim was to better understand first-time assistance dog handlers' experience of the placement period. Qualitative methodology was used since previous literature regarding this time was limited, particularly from the perspective of first-time assistance dog handlers. Therefore, in-depth interviews were employed to facilitate a comprehensive understanding of the experiences of the individual during this poorly understood placement period [24].

### Methods

This project was approved by La Trobe University Human Ethics Committee (HEC16-106).

### Participants

In a manner consistent with other transition studies [3], this project involved a small number of specially selected participants. Three Australian assistance dog organizations assisted with recruitment of eight first-time assistance dog handlers. Participation required that handlers could speak conversational English. Handlers included three youths (10–14 years) and five adults (19–43 years). Participants' demographic information and type of assistance dog can be seen in Table 1. The primary informant was the handler ( $N=7$ ), except in one case where a parent was interviewed instead of the young handler, as this family had decided to return the assistance dog and did not want to distress their young son by talking about it. Three other handlers were accompanied by a parent throughout the interview due to cognitive impairment or young age.

Table 1. Descriptions of participants and the type of assistance dogs.

Case study	Type of assistance dog	Handler gender	Handler age	Participant	Code	Training prior to receiving the dog	Training during placement period
1	Seizure alert dog	M	25	Handler	H1	Weekly training for a year at home and within community	Daily to weekly training at home and within community
2	Psychosocial assistance dog	M	36	Parent	P1	Weekly training for a year at home and within community	Daily to weekly training at home and within community
3	Mobility assistance dog	F	43	Parent	H2	Weekly training for a year at home and within community	2 days at the organization's facility and 8 days from home and community
4	Medical alert dog	M	12	Handler	H3	None	Daily to weekly training from home and community
5	Guide dog	M	19	Parent	H4	Weekly training for a year at home and within community	2 weeks at the organization's facility, and 2 weeks at home and within community
6	Medical alert dog	F	21	Handler	H5	Attended a weekend camp at the organization's facility	Daily to weekly training at home and within community
7	Guide dog	F	14	Handler	H6	Several weekend training sessions at various locations	Trained at home and within community for a few months with the instructor
8	Mobility assistance dog	M	10	Parent	H7	Attended a weekend camp at the organization's facility	3 days at the organization's facility and a few days at home and within community
					P8	None	

## Materials

Semi-structured interview schedules were developed based on benefits and challenges identified in existing literature [5,16], and were tailored to each individual, the provider organization, and their specific type of assistance dog. Throughout the interview, participants were encouraged to elaborate on information not specifically queried but which they felt was important. This facilitated understanding of each participant's point of view while allowing rapport to be built, potentially facilitating disclosure of information that may otherwise not be accessible [25].

## Procedures

Participants were contacted by their provider organization prior to receiving their assistance dog and were invited to participate in this study. Handlers who responded to this invitation were interviewed by JG approximately 1 month after being placed with their assistance dog. As this period is known to be very stressful for handlers, the interviewer aimed for 30-min interviews; however, all participants wished to speak longer.

Data were gathered from April 2017 to September 2018. Written informed consent was obtained from all participants prior to the interview. In the case of child handlers, informed verbal assent was obtained, along with written consent from a parent. Five interviews were conducted over the phone or Skype and three interviews were conducted in person. All in-person interviews involved the handler's parent and the handler. Parents assisted the interviewer to understand speech impediments and promote conversation. As these individuals had a strong relationship and were extremely involved in the handler's life, they were encouraged to elaborate on behalf of the handler when relevant.

## Analysis

Each interview was recorded on a digital audio recorder for later transcription. Transcripts were de-identified and uploaded to QSR International's NVivo 10 qualitative data analysis software. Inductive content analysis was performed by JG to identify key themes and patterns [26–28]. Each audio recording was listened to three times and the transcripts were read multiple times to ensure all relevant codes were identified and consistent.

Discussions were held between all authors to ensure codes were representative of the data. In the results presented below, repetitions or filler words (e.g., 'um') have been removed from quotes to increase clarity in understanding.

## Results

### Context

The interviews revealed that the three provider organizations took various approaches to placing assistance dogs, as demonstrated in Table 1. For example, P8 noted the shortened time spent training at the organization's location: "I did quite a speedy course, I did it in three days rather than ten days." Another young participant only completed at home training. These variations within the approaches may have influenced the outcomes; however, this was not explored due to the small sample size for each training approach.

### Results of thematic analysis

Although participants were interviewed regarding the benefits and challenges they experienced while working with their assistance dog throughout the placement period, only challenges are discussed further in this paper. Existing literature has focused almost exclusively on the benefits provided by assistance dogs [12,29], and our results in this respect were consistent with these previous studies. Additionally, a study in Japan found that most people who hoped to live with an assistance dog had not actually applied for one due to the challenges they expected to experience [30]. Our participants also expected challenges [31], yet still received an assistance dog. Therefore, more instructive from our perspective was reporting a number of substantial challenges experienced by new assistance dog handlers. These have not previously been reported, so a focus on them will potentially enhance the literature base and provide information that can be used by training organizations to improve the placement period. These challenges were unique, but underlying themes and sub-themes emerged. The three main themes were experienced as (1) the initial response to living with the assistance dog, (2) renegotiating relationships and social interactions, and (3) learning to



adjust expectations regarding the assistance dog's behavior and capabilities.

### *Theme 1: initial response to living with the assistance dog*

#### *The intensity of the change*

Handlers had varying experiences during the initial days with their assistance dog. The most positive experiences were reported by two handlers who received weekly training with their assistance dog prior to the placement period (refer to Table 1). These handlers' initial experience living with the assistance dog was not demanding. P1 said that there was "not too much pressure in the first few days, so that was good." Similarly, H4 said: "it wasn't overly much I had to do." The remainder of the handlers, however, found the initial training experience to be extremely demanding and intense. H3 described the intensity of the first few days at length, in which the words 'intense', 'exhausting', 'stressful' and 'difficult' were used; this summed up her experience. Similarly, H6 from a different organization used similar words to describe the initial days, and described her lack of energy to meet all the expectations, which resulted from current limitations due to her disability and lifestyle:

We had a set routine where we tracked out a route 'A' we called it, and it's just 120 meters, and at the beginning we were doing that five times a day with her [...] So even just that was a lot. I was using my walker a little bit and my chair a little bit, but it was more than I had been walking in ages, so I was really exhausted. Even just having to put on clothes every day and go out because there was someone here, that was so much and so different from what I was used to (H6).

Similarly, H3's challenges arose from depletion of cognitive energy, which she expressed as: "I wasn't aware there was so much to learn, I didn't realize how much brain, cerebral matter, I was going to use up." Overall, most handlers' initial experience living with the assistance dog was more difficult than anticipated. Two of the handlers became sick during the first month, which complicated and slowed the transition process considerably.

#### *Establishing a routine*

Each handler's daily routine necessitated change to accommodate care for the assistance dog and incorporate using the assistance dog for its intended purpose. Establishing a new routine was not perceived to be a direct challenge in most instances, but rather a necessity that brought minor challenges such as: a general change in routine, the handler learning the assistance dog's routine, and the assistance dog learning the handler's routine. Most commonly handlers reported needing increased time to go places. For participants with mobility impairment, this was most noticeable regarding lack of coordination or fine motor skills to clip the leash or put the jacket on:

It might be a bit difficult for me to get her dressed, so I have got to allow a bit more time. I guess another [thing] to mention with challenges, getting used to her needing to toilet. One of the challenges can be being in an inappropriate place for when she needs to go to toilet, so I am getting used to knowing the signs of what she does when she needs to go (H3).

This quote also demonstrates some of the challenges that H3 experienced learning the assistance dog's routine.

Similarly, the assistance dogs also had to become accustomed to a new routine and environment. Some assistance dogs were reported to be very curious and bark at sounds in their new environment. These challenges were expected to decrease as they became familiar with the routine, and most participants believed the assistance dog was settling into the routine: "The first few

days she didn't understand that routine, she was like, what's going on, what's happening in the house, there's noises. But now she just knows the sounds in the house, she is quite happy" (P1).

The development of these routines for both the handler and assistance dog was reported to be a very slow process and was often ongoing during the interview, 1 month post-acquisition. One handler described the slow process being due to introducing her assistance dog to more areas than companion dogs typically experience, such as doctors' offices and other public places. Even though it may have been a slow process, all participants felt that the routine was developing and that they were becoming accustomed to the new routine. As the assistance dog and the handler became more comfortable with each other it was expected to become easier: "it's all just learning and building up the knowledge. I know him more and know what he does, so I can learn how to improve on that, it's all just knowledge. It's hard to prepare for it" (H5).

#### *Implementing the rules*

Not only did handlers have to adapt their routine, they also had numerous new rules to follow. Handlers expressed feeling that these rules were strict and overwhelming:

At the beginning he was constantly on the lead, 24 hours a day, seven days a week, I could only go to the shower without him. I even had to go to the toilet with him, so it was like a suffocation. It was good when we were working together but around the house, when I had to constantly be hanging onto that lead for the first week or so, it was a source of annoyance for a little while, but that got better as well (H7).

Some handlers reported following the rules impeccably, which were set by the organization to assist in maintaining the assistance dog's training. Other handlers decided to adapt or ease the rules to fit their lifestyle, especially rules regarding people interacting with and petting the assistance dog in public:

There is just a lot of rules that are prescribed that honors the way she has already been trained and that's a little bit difficult with the general public to maintain sometimes, and that can be quite frustrating, but I am getting less and less [...] stressed about it (H3).

Implementing and maintaining the rules was commonly expressed as overwhelming and a challenge, but it also facilitated responsibility for the handler, especially regarding the assistance dog's care.

### *Theme 2: renegotiating relationships and social interactions*

#### *Interaction with the family*

Most handlers praised their families for assisting them to maintain the rules, quickly learning not to interfere and respecting them as a team: "[my family] supported me by knowing the boundaries, and knowing that yes, I am in charge, but respecting that when I say something that they have to do it" (H5). Although this was true in most cases, some family members found it difficult to not interact with the assistance dog. For example, P4 described telling her husband he needed to limit his interaction with the assistance dog: "he doesn't realize he is doing it either, so I'm like honey, unless you are handling [assistance dog], you don't talk to her" to which H4 added "yeah because he loves animals, so it's hard for him to not be able to socialize with her." These were considered minor challenges by the handlers.

#### *Public reaction to the assistance dog*

Compared with their family, handlers expressed numerous challenging interactions with the public. Only a couple of handlers perceived the challenges in public to be minimal or not

concerning to them, while other handlers had extreme challenges in public. Overall, handlers did not report experiencing many public access issues. Rather the challenges were due to the public's lack of education regarding etiquette towards assistance dogs. The most common challenge was learning to politely tell people not to pat their assistance dog and deflecting attempts to do so:

It's mostly positive, I've only had two public access issues so far. [...] I have had a few sort of narky people and the worst people are people who go in for the sneaky pat and or make clicky noises and are clearly trying to distract her, and even when she's got a 'do not pet' sign on her [laugh]. That's the most frustrating thing (H6).

H3 expressed that whether social interactions were perceived as a challenge was dependent upon her current emotions or the assistance dog's behavior:

I get stopped a lot in the street to chat to people and there's times when I find that a little bit frustrating, if I am not in the mood. [...] Sometimes I can't focus on the conversation because I am more preoccupied with her if she is not calm and doing as she is told, if she is distracted or being disobedient.

For one family, however, the social interactions and attention the assistance dog brought to them were too much trouble. Even within the disability community they wished for more public awareness:

We just found it was going to be a little bit too, I guess hard, which we didn't really realize. There were a few factors, so, one just being when we are out and about, having to constantly tell people, not to pat, not to distract. After doing it for two outings, I thought, we can't do this for years to come. And even though she has a little cape on, people could clearly see that she was a different dog, she wasn't just a pet, the amount of people that came up and try to pet her, and then you say 'don't pet' and then they start saying 'aww isn't she cute' and it's like 'aww don't distract her she is working'. Yeah, that was the major factor. I can't do this for the next eight years or so, to tell people not to touch the dog (P8).

Due to the belief that these challenges in public would be prevalent the entire working life of the assistance dog, and the expected upkeep in training, this family decided to return their assistance dog.

#### *Parent's role*

For most participants, their parents were extremely influential in their daily life. This did not change with the addition of the assistance dog. Many handlers (and the parents who were involved in interviews) reported that parents contributed substantial assistance to the care and routine of the assistance dog, especially when and if they became ill. This included tasks such as feeding, toileting, or even cleaning up vomit, all which should be the handler's responsibility (provided these tasks are within the handler's physical abilities). When parents were not directly assisting, they were often prompting their child to do these things. This caused some conflict for one family: "he gets cranky with me [...] it's just because he's got pressure on him to walk the dog and we're reminding him that he's got to do stuff and it's usually me because I am here all the time" (P1). Therefore, parents were commonly directly and indirectly assisting with the assistance dog. In most cases the assistance dog was reported to add to the parent's workload, especially for young handlers or those with cognitive impairments.

#### *Unnecessary assistance from other people*

Although parents assisted when needed, they also sometimes assisted unnecessarily. This was demonstrated when the handlers experienced challenges delivering basic commands to their assistance dog during two interviews. The parent stepped in when the

handler was unsuccessful. The handlers reacted neutrally and negatively to this unsolicited assistance. This was demonstrated when H1's assistance dog was standing instead of laying at his feet:

P1: So get her to go back down again, I shouldn't have even said that

H1: hey I keep saying, tell you to stay out of it

P1: yeah, I know, you have to say the word as well

H1: down

P1: on her back [telling H1 to push on the dog], that's it, oh she is resisting isn't she?

H1: yeah, she doesn't want to

P1: I can tell! She's like nope. She can sit as long as she stays, [dog lays down] Yes!

Since the organization had deemed this team sufficiently trained, the handler should have control over the assistance dog to the extent that they are able. As the handler appeared to know what to do with the dog and was physically capable at this time, the support by the mother may not have been necessary although potentially warranted in other situations. Therefore, it seemed that other people, especially parents, tended to hesitate relinquishing their control over the handler and, by extension, the assistance dog.

Some handlers expressed great trouble trying to keep other people, especially carers, from stepping in to assist them when they did not need assistance with their assistance dog. Carers often provided conflicting information about the routine, care and general dog information. This conflict caused added anxiety and considerably delayed the complete integration of the assistance dog into their life. Handlers who commonly interacted with carers also had more trouble maintaining control and making decisions regarding their assistance dog when carers were present. This was expected to be a continual challenge until everyone who interacted with the handler was in congruence: "So when you are in a residential house like this with a lot of different workers, it's quite hard to maintain consistency. I think it's difficult. I think it is quite different from going into a family situation, where the people are all on board" (P2). H2 agreed with these sentiments.

#### *Lack of understanding by schools, day centers and community programs*

Beyond challenges with specific individuals, handlers often experienced challenges from organizations such as day centers, schools or community programs. Challenges arose predominantly from the lack of previous experience these organizations had with assistance dogs. Consequently, these organizations lacked understanding of their role with the assistance dog, accommodations that needed to be made and the impacts on their other clients. One parent, whose son attended a couple of organizations emphasized the hindrance this caused:

[The day program] is aware about the assistance dog organization and they are aware about [H1's] goals [with the dog] but people still ask and are not sure on what an assistance dog actually means, like what rights [the assistance dog has]. Even though I say the dog can go anywhere and do anything, I think they still want something more concrete (P1).

Another parent commented on the extra procedures the day program was requesting to be implemented prior to the



assistance dog being allowed to attend with the handler. This greatly prolonged the transition process as they needed to acquire extra funding from the Australian government's disability agency to pay an extra carer to attend the day program with the handler:

[The day program] wants one-on-one support (from a carer, for the handler), at least in the first year with the dog. And then because [the day program] have never had an assistance dog previously, then they want to have a risk assessment done by some external body. So then they can write up their processes and guidelines and things (P2).

All handlers who attended these types of organizations were still working through these challenges with the outside organizations at the time of the interview. Therefore, full integration had not occurred in these life areas.

### *Theme 3: adjusting expectations regarding the assistance dog's behavior and capabilities*

#### *Assistance dog behavior challenges*

Handlers had different levels of previous experience with dogs prior to acquiring their assistance dog. Therefore, dog behavior was a challenge, especially for inexperienced handlers. Common behavioral challenges included: barking, eating out of the trash, defecating in the house, and chewing or destroying things. Most participants attributed these challenges to the assistance dog's natural tendency and therefore found it understandable: "He's by no means a bad dog or anything, he's just a dog!" (H7). Other behavior challenges however, led one handler to feel that she had been unsafe in certain situations due to the assistance dog not listening:

The other day I went on one side of a sign and she went on the other side of the sign and that broke the lead. That potentially could have resulted in injury [...] Couple of times trying to get her used to stopping and waiting at the side of the road. Couple of times I really had to be stern with her so that she doesn't go out onto the road and get hit by a car (H3).

Another handler experienced some especially stressful behavior challenges when her assistance dog went through a fear period. During this time, she reported that the assistance dog would suddenly become scared of things for short periods of time, like mirrors, lights in a darkened street, her father, and even other dogs:

For the whole week she was so afraid of dogs, and her tail would go between her legs and ears pulled back. She was perfect in shopping centres and all my appointments, and that sort of situation, but walking down the street was really difficult. She would get really skittish (H6).

With assistance from the organization this resolved. In general, all reported challenges were perceived to be correctable through further training.

#### *Unmet expectations*

Overall, organizations were praised for their compassion, flexibility and commitment to the success of the handler-dog team. However, for some handlers, the expectations they had for their assistance dog were not met by the time of the interview. For one organization, in particular, a couple of handlers felt that their assistance dogs were less trained than they expected when they received the assistance dog:

I think I sort of had in my head that she'd be more fully trained when I got her, and I think that was probably a misunderstanding on my part. I know they had explained that to me before, but when she got here and she didn't have many of the tasks yet and she was such a puppy and she was getting distracted. I was like 'oh this is not how I thought

it was going to be'. I thought within the first month or so we'd be a working team and we're not [laugh]. We're not a working team yet, and that's okay (H6).

Another handler, H7, expected to feel like a working team much sooner than they actually did. For this handler, the interview occurred a month later than other handlers, because she was still working intensively with the instructor and was not expected to be a working team at 1 month; consequently, she did not perceive they were a fully working team during the interview, either.

## **Discussion**

This study aimed to explore the experiences, especially challenges, which first-time assistance dog handlers faced during the placement period. To facilitate a better understanding of participants' experiences, the components of Meleis' transitions theory: change triggers, properties, conditions and patterns of responses, will underpin the discussion.

### *Change triggers*

An individual acquiring an assistance dog experiences a profound situational change. The experience and response to situational changes are important to understand to facilitate a smooth transition and are exemplified in theme one, where it is apparent that handlers had many challenges initially integrating the assistance dog into their life. It is possible, however, that other types of changes may also be occurring in their life concurrently.

### *Properties of transitions*

For each assistance dog handler, the properties of the transition could be different based on the individual and/or the organization. For example, some individuals may perceive the transition beginning the moment they were accepted to receive an assistance dog, or when they started working with the assistance dog, thereby changing the initial time span. Irrespective of when they perceived the transition to begin, the theory assumes that this turning point, or change, triggers a process of transition, which is variable but extends beyond the turning point [23]. From the presented results it appears that all handlers (excluding H8 who returned the assistance dog), were subjectively still experiencing a transition after the placement period had ended. Elsewhere, the transition experience has been reported to take time due to building a relationship with the assistance dog [19] and potentially extends beyond the placement period for 3 months [5] or more.

As evident from our results, the experiences of a transition process change over time [23]. One month after acquisition, handlers reported that some initial challenges were becoming less prevalent and they expected a continual reduction in challenges over time. Other literature supports this finding. For example, at 3 months post-acquisition, Wiggett-Barnard and Steel reported that their handlers also experienced challenges with establishing a routine, providing care for their assistance dog, and difficulty with social interactions and public education. However, studies conducted further from the placement period report few or no challenges. One exception, a study conducted at 6 months by Rintala et al. reported that handlers experienced challenges ensuring the assistance dog's needs were met when they were ill, public access issues and dog behavior or training problems. The apparent change in reported number and type of challenges over time

may indicate that some challenges reduce over time or the handler may become accustomed to them and no longer perceive them as challenges [6]. Overall, challenges in the community regarding public access [8,9], social interactions [32,33] and physical or behavioral challenges with the assistance dog [34] seem to persist for some individuals. However, challenges maintaining a routine and consistent rules have not been reported to occur later in relation to the placement period, demonstrating that this is a dynamic process.

The experience of disconnectedness was also apparent, especially in handlers' experiences with carers, who often tried to control them, the situation or the assistance dog. Carers and family members are known to experience challenges accommodating to their new role with the handler because of the assistance dog's job [6,35]. Although this adjustment is difficult for care providers, it is beneficial for the handler, as relying on the assistance dog is more empowering than relying on others to assist them [14]. Therefore, when others take control of the assistance dog, the new role as a handler and feeling of empowerment is removed. This subsequently returns the handler to a previous self-concept, which handlers struggled to combat.

Similarly, handlers who attended outside organizations (e.g. schools, community care centers) all experienced a discontinuity in their roles as they were not yet allowed to bring their assistance dog, thereby creating a disconnect, within their role as a handler, based on their current environment. According to the handler, some family members reported feelings of disconnectedness or jealousy with the addition of the assistance dog as they struggled to limit their interactions with the assistance dog. This struggle has been reported in other studies, especially families with children, but commonly wanes with time [6].

Milestones, or critical points, are important to identify and understand as they can be used as assessment or intervention points by the provider organization. The assistance dog organizations represented in this study did not seem to identify or record milestones. This research, however, demonstrated two potential milestones that could be assessed. The first involved completing the official placement period with their provider organization, which all handlers accomplished (excluding H8, who returned the assistance dog). The second milestone involved completely integrating the assistance dog into all areas of the handler's life, which had not been accomplished. Milestones were not specifically assessed here; however, it was obvious that integration of the assistance dog into their other activities was important for the transition process and could be an important milestone for provider organizations to monitor and assist.

#### *Conditions of transitions*

Of the four types of conditions, personal and community influences affected handler's experiences most directly and will be focused on. For our handlers, personal challenges often stemmed from the handler's knowledge about or experience with assistance dogs' and their abilities or challenges pertaining to their disability. This commonly involved physical coordination challenges to dress their assistance dog, or psychological challenges, such as anxiety involved with negative situations in public or receiving conflicting information from people. Similarly, the challenges handlers experienced with routines were influenced by both physical and psychological personal conditions.

Community conditions were influenced by support from others and beliefs or prejudices within the community [23]. Handlers in this study also experienced challenges within the community

which became extremely influential in their perception of success throughout the transition process. For example, integrating the assistance dog into their life outside of their home environment and the lack of community education regarding etiquette toward assistance dogs was a challenge. The effect of the community's behavior and lack of respect toward H8's assistance dog caused exceptional concern; consequently, the assistance dog was returned. Therefore, these conditions are important for organizations to understand.

#### *Patterns of response*

Patterns of response, the final component of Meleis' transitions theory, also enhances understanding of the transition process for assistance dog handlers. To do this, the theory proposes two domains, process and outcomes. Outcome patterns, as the name implies, should be assessed at the end of a transition process [23]. Besides P8, none of our participants were completely through the transition process at the time of the interviews. Therefore, outcomes will be discussed in a future publication.

The first process pattern is engagement. For our population, all participants, even P8 who returned the assistance dog, were genuinely engaged with the dog, the organization and the transition process. The level of engagement was most clearly demonstrated through theme one, where participants' changes in routine and adapting the rules, demonstrate that they were invested in making the transition work for themselves. Adapting the rules and the importance of rules has also been shown to occur in other studies [11,19]. Similarly, parents have been shown to be very engaged with the transition process as they often facilitate the acquisition and assist with the assistance dog's care. Other studies have shown that parents felt the work they contributed to the care of the assistance dog was worth it for the benefits that they received [18]. Therefore, handlers, and even family members, demonstrated a high level of engagement in the transition process.

All handlers recognized their need for support throughout the transition process and sought it when necessary. This appears to be important during the adjustment period for guide dog handlers, as it has been shown that they require more hours of formal and informal care during the first 6 months with a guide dog than later [15]. Although this was not measured here, handlers did seek additional support from their instructor, organization and family after the acquisition of the assistance dog. Throughout the placement period handlers relied heavily on their instructor and were not afraid of seeking them out for help after the placement period ended. Similarly, handlers often sought support from their parents. It is well known throughout disability support research that parents play a pivotal role in advocating for their child, such as communicating their needs and assisting the transition processes [14]. As a result, the handler may only experience the outcomes of their parent's initiatives [14]. This was demonstrated in our results, as parents were communicating with outside organizations to facilitate the assistance dog's integration. Like other studies, all handlers recognized their parent's involvement and often sought them out for assistance in caring for their assistance dog [6]. Overall, most handlers were not afraid to locate and receive support as they perceived the support from their organization, their family, care providers and other members of their support network to be positive.

From the challenges presented here it was apparent that most handlers understood the impact that relationships with family, the provider organization, other outside organizations and the



community, had on the transition process, as most were sought for support. However, the results demonstrated bipartite groupings, where some relationships, such as with carers, limited handlers' transition progression, while others, such as with family members and instructors, facilitated it. These relationships are very important to the transition process and could ultimately assist or hinder handlers' understanding of their location and situation within a complex social landscape. Currently, there is little research investigating the family dynamics or instructor influences that would promote or negate successful transitions with assistance dogs [14]; however, these results demonstrate that this support is influential.

When discussing challenges, participants commonly emphasized the new demands placed on them, such as the responsibility of caring for the assistance dog and accommodating conflicting demands experienced from implementing the rules or integrating the assistance dog into their life. However, some participants demonstrated confidence or were gaining confidence to deal with these demands. The most prominent example was H3's confidence to adapt the organization's rules to accommodate the assistance dog into her life. Handlers also demonstrated confidence through their reported need to advocate for their rights as an assistance dog handler and telling people not to pat their assistance dog. Although these were experienced as challenges, confidence in these areas had been increasing, which is important for a successful transition. Numerous studies report handlers gaining confidence in abilities to do things they previously could not [36,37]; however, confidence in integrating the assistance dog into their life is not commonly reported.

#### *Implications for assistance dog organizations*

The findings from this research have many potential implications for assistance dog organizations. First, Meleis' transitions theory assisted to demonstrate that organizations need to understand that the transition process extends beyond the placement period and is experienced differently for every person. Similarly, there were many influences which could alter the transition duration, of which organizations should be aware. For example, many challenges associated with accommodating the assistance dog into the handler's life could extend the transition process. This is also potentially influenced by the speed at which the relationship is built. However, the typical time span is undetermined.

Since transition is a process, it is important for organizations to understand that the initial challenges that handlers experience may not be experienced long-term. Therefore, organizations should be aware of the challenges identified and support the handler through this process. This will assist organizations to educate their clients about the short- to medium-term nature of the initial challenges. To mitigate some of these challenges, organizations should educate prospective handlers about personal and community conditions that could influence challenges during the placement period, such as their health or lack of public education around assistance dogs. They should also emphasize challenges that could be present initially but reduce over time such as development of routines or their knowledge and experience with the assistance dog.

Assistance dog organizations should also understand that handlers may be experiencing other transitions in their life besides acquisition of their assistance dog, such as transitions from adolescence to adulthood or health-related transitions [14], which could complicate the transition. Organizations should take this information into consideration to sufficiently prepare the handler

and ease the placement period experience. If organizations were to increase first-time handler's preparation for an assistance dog, the time instructors spend with the individual may reduce and handler's stress and challenges may diminish. Milestones should be monitored to assess this.

The results presented here indicate that assistance dog organizations should be aware of the substantial influence they have on the transition experience for their handlers. Many provider organization qualities could have impacted the challenges experienced. Potential variables include the amount of information provided prior to acquisition, duration of the training phase, the amount and availability of contact and the quality of the relationship the instructor has with the new handler and their support network. Although these were not directly analyzed, these variables are potentially important factors that could contribute as preventative or therapeutic interventions to assist with the placement period.

#### *Limitations and future directions*

To our knowledge, this study was the first to qualitatively evaluate the placement period experience for assistance dog handlers. However, a few limitations should be acknowledged. Due to the limited number of assistance dogs placed by organizations, recruitment was limited. This potentially prevented us from reaching the saturation point of acquiring new information. Age of handlers was skewed toward younger individuals; however, most of them had experienced their disability since birth and were therefore not new to the experience of disability. Although we did not interview family members, carers or other people supporting the transition process in this study, it is known that close others can affect and influence the transition process [4]. Therefore, perspectives from influential individuals should be considered in future research. As this is the second part of a longitudinal study, this has been addressed when discussing expectations of handlers in a future publication and will be considered in future studies where data collection is ongoing. However, to minimize added stress to the handlers, data were not collected from other individuals during the placement period.

To our knowledge, this study was also the first to apply Meleis' transitions theory to the assistance dog literature. Although this theory has been criticized for lack of consistency and clarity in categorization and terminology [1], we feel that it provided a good initial framework to investigate the placement period. Future assistance dog research should address more components of this theory. We recognized there was variation in the three organizations' approaches to placing assistance dogs, but did not probe this issue in depth. Therefore, influences from the organizations' training and program during the placement period should also be accounted for in future studies, especially in relation to their use as an intervention, as these influences could influence the perceived difficulty and success of the placement period. Researchers should also explore the variation in duration of the placement period and milestones which could be used to track progress and indicators/factors predicting difficult transitions. The outcome conditions presented in Meleis' transitions theory should also be explored.

#### **Conclusion**

This study investigated first-time assistance dog handlers' experiences of receiving their assistance dog as reported 1 month after being placed. The findings suggested that handlers experienced many challenges when initially working with their assistance dog,

as it was not fully integrated into their life at the time of the interview. Regarding these challenges, three themes emerged: (1) challenges with the initial response to living with the assistance dog, (2) renegotiating relationships and social interactions, and (3) adjusting expectations regarding the assistance dog's behavior and capabilities. By applying Meleis' transitions theory we have enhanced our understanding of participants' experiences throughout the transition process. Understanding this transition experience is important because it may impact future relationship the handler has with the assistance dog and the organization and assist organizations to improve their practice. Overall, this research is important for assistance dog organizations to develop an understanding of the challenges that handlers experience during the placement period. However, more research needs to be conducted before suggestions for best practice can be advised.

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### Disclosure statement

The authors report no declarations of interest.

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### 5.3 Further Discussion

The aim in this chapter was to explore first-time handlers' experiences working with their AD one month after acquisition. Interviews were conducted with handlers to obtain in-depth knowledge of their initial experiences as this period had not been investigated sufficiently in the AD literature. The interviews demonstrated that when first-time handlers began to work with their AD, they experienced many benefits (Section 5.1) and prominent challenges (Section 5.2). Importantly, both benefits and challenges were expected (Chapter 4).

Some expectations had eventuated at this time, while others had not. For many handlers, the benefits that arose from the AD-handler relationship were expected and had eventuated; however, the challenges were often more prominent, time-consuming or difficult than expected. This finding is important for prospective recipients to understand because although they may receive some benefits right away, it is vital for first-time handlers to understand *how* challenging this experience could be and that these challenges may detract from the initial benefits experienced. This information is crucial for AD organizations to relay to their clients before they receive their dog to minimize potential initial disappointment in their AD's ability.

AD organizations could reduce some challenges experienced by increasing education regarding realistic benefits and challenges that each handler may encounter. This is important because this study demonstrated that handlers and families with more dog experience found the integration of the dog into their life easier than individuals without dog experience. Additionally, those with more extensive training and information provided by the AD organization experienced an easier initial time working with their AD as well. Overall, the more extensive prior experience and knowledge a prospective recipient had with ADs, the perceived ease of integrating the

AD into the handler's life was increased. At this time, however, it could not be concluded that all ADs were assisting their handler to live their best life.

## **5.4 Summary**

This chapter aimed to understand the experiences first-time AD handlers had during and just after the placement period. In-depth interviews revealed that learning to work with and integrate an AD into daily life provided many benefits from the relationship that was forming; however, the challenges experienced were often more difficult than anticipated. These challenges became the focus of the paper included in this chapter because it provided useful new information for the field. Although the benefits reported in Section 5.1 could be used to support the idea that handlers increased their ability to live their best life from working with an AD, the overwhelming prevalence of challenges hindered this notion. Given these results, further study is warranted to examine the longer-term effect that ADs had on their handler's ability to live their best possible life.

## **CHAPTER 6: Long term handler experiences with assistance dogs'**

The previous two chapters demonstrated that first-time AD handlers expected and experienced many benefits and challenges when they integrated an AD into their life. Some expectations aligned with experiences; however, challenges were more prevalent than expected just after receiving their dog. As expected, handlers were still experiencing a transition one month following placement. To better understand how the benefits and challenges progressed and compared to their expectations, this investigation needed to consider a time when the handlers' lives with their dogs were potentially more stable. This information could assist AD organizations to develop practices to minimize the challenges or reassure the handler that the challenges are only temporary (if applicable).

The aim in this chapter is to understand handlers' long-term experiences of working with an AD. To capture this experience, interviews were conducted at six months post-placement with all case study participants (handlers, AD instructors, family members, carers/others) and again at one year, primarily with the handlers. The two periods chosen worked together to corroborate the reported benefits and challenges that handlers experienced. Most importantly, this chapter demonstrates how the initial benefits and challenges that were expected and experienced eventuated. To accomplish this, the benefits handlers experienced are presented next. Then the challenges are presented in the paper titled "Beyond the benefits of assistance dogs: Exploring challenges experienced by first-time handlers," published in *Animals* in April 2019.



## **6.1 Trained benefits experienced long-term with an assistance dog**

ADs are trained to perform many tasks that provide substantial benefits for their handler (Gillett & Weldrick, 2014). Table 2 outlined the functions each type of AD is trained to perform. Although trained benefits were expected (Chapter 4), many handlers were disappointed with their dog's trained ability initially (Chapter 5). Six and twelve months after receiving their dog, the ADs were performing trained tasks much more reliably, and the handlers recognized the associated benefits.

Trained tasks primarily provide benefits which directly and positively affect a handler's life. For example, seizure alert dogs alert to seizures before their occurrence (Brown & Strong, 2001; Dalziel et al., 2003), enabling the handler to find a safe place to minimize injury and notify a supportive individual to be present if desired (Dalziel et al., 2003; Kirton et al., 2008). Within the study, this ability was absent in all medical alert dogs just after being placed. P1 noted that by six months her son's AD alerted more reliably: "In the beginning [the alerting] was mainly at home, but now she is doing them other places as well." Handlers and family members involved in this and other studies have reported that this ability makes the handler feel safer (Di Vito et al., 2010) and decreases some uncertainty in their life (Hayden, Penna, & Buchanan, 1992). The trained ability to alert provides handlers life-saving benefits, which currently no other form of assistive technology can provide.

Trained tasks also directly affect an AD handler's life while providing the same functions as other forms of assistive technology. Mobility ADs, for example, pick up objects, a task which could also be accomplished through assistance from carers or tools such as grabbers. This task was beneficial for H3 who described commonly receiving these benefits during shopping experiences with her AD:

“I had a basket on my lap and I was trying to get a little bottle of tea tree oil and I dropped it. I was able to give her the command to pick it up and pop it in the basket for me. It’s what [my AD] is here for, and that was just perfect.”

Compared to a tool or carer, however, the benefits that ADs provided the handler had extended effects, including developing feelings of accomplishment and independence (Herlache-Pretzer et al., 2017). Developing these for the first time, or regaining them after acquiring a disability, such as H3, allowed handlers to expand their full potential and enhance their lives in ways that carers or other tools could not facilitate.

Dogs can also be trained to recognize emotional change indicating anxiety or positive/negative emotions in their handler (Albuquerque et al., 2016; Crowe et al., 2018; Love & Esnayra, 2009; MacKinnon, 2014). For example, H6 noted that her AD was now able to: “alert to my emotional state, so she’s alerted to panic attacks that I haven’t really noticed. Especially if I am in a session with my psychologist and I start to dissociate she will very quickly be alerting to that.” Other forms of assistive technology cannot recognize emotional change, but individuals can be taught to regulate their emotions through therapeutic emotion regulation techniques.

Traditionally, emotion regulation training involves teaching individuals to recognize the onset of emotions through mechanisms such as cognitive reappraisal, selective attention, working memory and response inhibition (Cohen & Ochsner 2018).

Although people can be taught this, ADs like H6’s, have been reported to recognize the change in emotion before humans were aware (Crowe et al., 2018; Love & Esnayra, 2009; MacKinnon, 2014). Once a dog is trained to identify this, they can distract the handler, which can redirect the negative emotional mindset and potentially provide further benefits.

Overall, trained tasks that ADs perform are variable depending on the disability and often replicate other forms of assistive technology, functions of carers, or goals of therapy. However, medical alerting is often not able to be accomplished through other means (except for diabetes alert). Correspondingly, the training for medical alerting took the longest for the ADs to accomplish reliably, if at all, during this time frame. The uncertainty in the dog's reliability to alert is undesirable as handlers know that a medical alert could save their life. Further challenges will be discussed next.

## **6.2 Paper 5: Beyond the benefits of assistance dogs: Exploring challenges experienced by first-time handlers**

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# Beyond the Benefits of Assistance Dogs: Exploring Challenges Experienced by First-Time Handlers

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## Article

# Beyond the Benefits of Assistance Dogs: Exploring Challenges Experienced by First-Time Handlers

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**Simple Summary:** People with disabilities employ many forms of assistive technology, including assistance dogs (AD), to assist them with managing their disability. Most previous research has focused on the benefits of ADs for their handlers with disability; little is known about the challenges they face. The aim of this study was to explore the experiences of first-time handlers when working with an AD. It was found that handlers experienced many benefits from their dog, as would be expected. However, they also reported experiencing many challenges which hindered or delayed these benefits. These challenges arose from the handler's medical conditions, cognitive ability and social environment, as well as from dog-related factors. They are important for potential handlers and AD organizations to consider prior to placing an AD, since this will assist individuals and organizations to better determine if an AD is the right form of assistive technology for a particular individual, and, if so, how best to prepare to integrate the dog into the person's life.

**Abstract:** The purpose of this study was to explore first time handlers' experiences when working with an assistance dog (AD). Interviewees included seven first time AD handlers and 14 other individuals close to these handlers, including family members, carers and AD instructors. Semi-structured interviews were conducted six months and one year after each handler received their AD. Interview questions were informed by the Thriving Through Relationships theory of social support and previous interviews with the participants. Inductive content analysis corroborated previous findings regarding the benefits that ADs provide. In addition, four factors were revealed to substantially influence the challenges handlers experienced when learning to utilize their dog. These included the handlers' medical conditions, cognitive ability and social environment, and dog-related factors. Organizations would benefit from considering these factors in their operational processes.

**Keywords:** service dogs; disability; thriving; assistive technology

## 1. Introduction

People with disabilities, especially chronic disabilities, often face high levels of adversity and have pervasive support needs that encompass many life domains [1]. Multiple types of support are available to ease challenges associated with specific disabilities, including assistive technology or recruitment of carers [2,3]. The implementation of support may affect an individual's self-perception and ultimately impact their well-being or quality of life [4].

An assistance dog (AD) is one form of assistive technology, with these dogs being trained to provide disability-specific support to one person (the handler) who has a disability or disabilities [4,5]. Functions these dogs are trained to perform typically include physical tasks, which provide performance



benefits [6]. In addition, ADs are reported to provide dynamic emotional, social and psychological benefits [7], which increase the handler's wellbeing [8] or quality of life [9]. Handlers also experience less negative stigma than is commonly associated with other forms of support [10].

The benefits ADs are known to provide have been repeatedly and extensively reported in the literature [11,12]. However, the prevailing research focus is on benefits and thus minimizes the information available about challenges people experience. Previous work has demonstrated that many challenges were expected prior to acquiring an AD [13] and experienced when handlers began to work with their AD [14]. Other researchers have briefly mentioned challenges experienced at later time points as well [15]. Therefore, developing a holistic understanding of experiences handlers have with an AD is important.

The purpose of this paper is to document challenges experienced when working with an AD. To accomplish this, semi-structured interviews were conducted with first-time AD handlers and other individuals who have a significant impact on the handler's life. Although many benefits were reported, information about challenges was selectively extracted from the interview data. This enabled better understanding of how various factors contribute to the challenges that AD handlers experience.

## 2. Materials and Methods

La Trobe University Human ethics committee approved all procedures (HEC16-106).

### 2.1. Participants

First-time AD handlers were recruited from three AD organizations in Australia for voluntary participation in this study. Seven handlers volunteered and formed the basis of seven case studies. The handler could nominate other individuals to participate as well. Nominated individuals had a relationship with the handler and dog, but each provided a different perspective on the handler-dog relationship. Individuals, as can be seen in Table 1, included: parents ( $n = 6$ ), carers/others ( $n = 3$ ) and AD instructors ( $n = 5$ ). Instructors were people employed by the AD organizations to teach the handler to work with their dog.

Table 1. Demographic information for case study participants.

Case Study	Type of AD	Handler Gender	Adult/Child	Participants	Code	Time of Interview (mo. Post AD Placement)	Mode of Interview
1	Seizure alert dog	Male	Young Adult	Handler	H1	6 12	In person In person
				Parent	P1	6 12	In person In person
				Instructor	ADI1	8	In person
2	Psychosocial AD	Male	Middle Age Adult	Handler	H2	6 12	In person In person
				Parent	P2	6 12	In person In person
				Carer	C2	7	Phone
				Instructor	ADI2	6 12	Phone In person
3	Mobility AD	Female	Middle Age Adult	Handler	H3	6 12	In person Phone
				Instructor	ADI3	6	In person



Table 1. Cont.

Case Study	Type of AD	Handler Gender	Adult/Child	Participants	Code	Time of Interview (mo. Post AD Placement)	Mode of Interview
4	Medical alert dog	Male	Child (age 12)	Handler	H8	6	In person
				Parent	P8	6	In person
				Instructor	ADI8	6	In person
5	Guide dog	Male	Young Adult	Handler	H5	6 12	Phone Phone
				Parent	P5	6	Phone
6	Medical alert dog	Female	Young Adult	Handler	H6	6	In person
				Parent	P6	6 12	Phone Phone
				Other <sup>2</sup>	O6	6	Phone
7	Guide dog	Female	Child (age 14) <sup>1</sup>	Handler	H7	8 14	In person Phone
				Parent	P7	8	In person
				Instructor	ADI7	8	In person
				Other <sup>3</sup>	O7	8	In person

<sup>1</sup> the handler was 14 years old at 8 months, 15 years old at 14 months; <sup>2</sup> the AD organization's psychologist; <sup>3</sup> the handler's learning support educator at school.

## 2.2. Materials

Two elements of a multi-part study [13,14] preceded the final component of the investigation, which is reported in this paper. Semi-structured interviews were conducted by JG. Previous information collected from these individuals enabled personalization of the interview questions. The Thriving Through Relationships theory of social support [16–19] provided the conceptual underpinning for the interview questions. This theory has been shown to be potentially relevant to the AD context [20,21]. The initial questions were only loosely specified, however, so this enabled the interviewer to elicit more nuanced responses when appropriate.

## 2.3. Procedures

Interviews were conducted between October 2017 and February 2019, approximately 6 and 12 months after each handler received their dog. Written informed consent was obtained for all participants prior to the interview; child participants provided verbal assent, along with parental written consent. Interviews ranged from 30 to 60 min. The timeline of interviews is presented in Table 1, along with the mode of interview. In-person interviews were conducted at a location familiar to the interviewee. Some handlers were interviewed with a nominated individual who knew them well in attendance. For handlers who experienced intellectual disabilities or speech impediments, this strategy facilitated a continuation of conversation and enhanced understanding.

## 2.4. Analysis

All interviews were audio recorded, transcribed, de-identified, and uploaded to QSR International's NVivo 10 qualitative data analysis software, by JG. Inductive content analysis was conducted [22] by JG and validated through extensive discussions with other members of the research team. Due to the various perspectives included, data source triangulation enhanced the reliability of the findings [23,24]. De-identified transcripts are available from the authors upon request, but original data cannot be made available due to the identifiable nature of this material.

### 3. Results

The analysis revealed that most of the information collected from the interviews confirmed already established benefits that ADs provide [12]. Rather than focusing on these previously reported benefits, the focus in this paper is on the portion of the data that illuminates complexities experienced when working with an AD. This emphasis will contribute to building a more holistic understanding of what handlers and their social contacts experience when working with an AD.

Inductive content analysis revealed that four main factors contribute to the challenges experienced when working with an AD. These were: the medical condition/s experienced by the handler, their cognitive ability, their social environment, and dog-related factors. For some handlers, these factors were so problematic that they substantially reduced the benefits the handler was able to receive from their AD. Each factor is briefly discussed below, with quotes from participants illustrating negative impacts when these were apparent.

#### 3.1. Medical Condition

Handlers who experienced multiple or complex medical conditions, particularly if these consistently or rapidly changed, experienced more challenges compared to people with single or relatively constant disabilities. These challenges were derived from the changing conditions of the disabilities themselves, but also from associated mental health challenges and extended hospital stays.

##### 3.1.1. Changing Medical Conditions

The nature of the medical condition, such as its complexity and stability, was a significant factor in determining the benefits received from the AD. For example, for some participants, certain times of the year were more challenging for them medically. As one mother stated:

“the difficulty we have at this time of year is that [H6] has autonomic difficulties and she can’t cope with the heat at all. So basically, she goes from house to car to shopping center, or an appointment. She can’t go for a walk on the street”. (P6)

This led to challenges for the handler in performing all the functions necessary to care for their dog. Consequently, the dog bonded more than was desired with other family members, who were required to perform these functions, and benefits such as increased independence and exercise were not received by the handler.

Individuals whose physical and mental health fluctuated markedly from day to day also experienced extreme challenges in consistency and developing rules. One instructor described:

“we had so many surprises in this program, they [H4 and the family] go away, they come back, today he [the handler] is not well, tomorrow he is. They had so many issues with school and so many issues with this and that [ ... ] in this program [there are] almost no rules, we make a rule and then we need to change it as something else happens”. (ADI4)

This slowed training progression and integration of the dog into the handler’s life, which consequently delayed the training for the dog to alert to the handler’s medical condition.

Another handler carefully described how she believed her complex medical condition created more challenges than those faced by individuals with less complex disabilities:

“I think it’s really difficult because with ADs, a lot of it is about your specific disability rather than the dog. Like whether things work out or not because if you have, I’m careful with my words here, something a little less complex, like you are blind or you have diabetes where the dog has one job and things were a little more predictable in your everyday life, then I think things are a lot easier. But, because my health is one day at a time sometimes, and there’s so many factors, like fatigue and seizures and mobility and she’s got so many tasks

and so many jobs that she is meant to be doing all at the same time, she's really not just an alert dog, she's not just a mobility dog, she's not just a psychiatric AD, she is ALL of those things combined". (H6)

The complex nature of this handler's disabilities slowed training progression and, therefore, she did not receive benefits such as confidence and independence as early or as consistently as handlers with less complex disabilities.

### 3.1.2. Mental Health

A majority of handlers experienced mental health challenges. For some handlers, their mental health significantly impacted their concentration, tiredness, stress, motivation and assertiveness. For one handler, this meant that she could not reinforce the training:

"A lot of the time I don't have the energy to follow through and be as consistent with the house training. So, if I call her and she doesn't come straight away a lot of the time I don't have the [energy] to follow through and actually say '[dog] come'". (H6)

This allowed the dog to learn that she could get away with undesirable behaviors. As a result, the dog was required to return to the training organization for one month to fix these behavior problems. For others, their ability to maintain control changed from day to day depending on their mental health. For one handler who received considerable benefits from companionship with his dog, this was noted to decrease when he was experiencing mental health issues. His carer noted: "I think as a companion it [the dog] has de-stressed him when the mental health issues haven't been an issue. When the mental health issues are an issue, I don't think [the dog] has had any major effect on it." (O2). This AD provided considerable companionship and socialization benefits to the handler most days, however this was minimized when mental health issues were prevalent. Overall, participants emphasized how much the fluctuation in mental health impacted the handler-dog relationship, contributing to regression in the dog's abilities. This reduced the overall benefits obtained but also sometimes created welfare issues for the dog, and a subsequent need for an extended period of rehabilitation/re-training.

### 3.1.3. Hospital Admissions

Three participants had extended hospital admissions within the first year with their dog. Two of these handlers were not able to keep their dog in the hospital with them for the extended period. This was due to the handlers' inability to care for and toilet the dog while in hospital. Even the handler who kept the dog with him during the hospital admission noted a regression in training. One participant noted: "we did feel that [the hospitalizations] probably had slowed the process in terms of bonding and then achieving the goals, in terms of being more independent and probably the alerting behavior might be a little sharper by now" (O6). Hospital admissions greatly impacted bonding and the handler's ability to thrive, as stated by one mother: "She spent 163 nights in hospital last year, she is not thriving. She's not well. Maybe she would be less thriving without [the dog], but she is certainly not thriving" (P6). Hospital admissions were unavoidable and hindered the receipt of many benefits as the dog could not be physically present.

## 3.2. Cognitive Ability

Some handlers' medical conditions affected their cognitive ability, which negatively impacted some individuals' ability to receive benefits from their dog. Compared to those with adult-level cognitive abilities, handlers who had an intellectual disability or who lacked maturity (due to age) experienced more challenges related to memory and consistency in handling the dog and thus maintaining its trained behavior.



### 3.2.1. Maturity

Lack of maturity was identified in two young handlers, where it contributed to a deficiency in forward thinking or an inability to think outside themselves. While considered normal for their age, this was not conducive to taking care of their dog. One instructor noted that the handler: “doesn’t have any perception of forward thinking in how this is going to relate to her. Her world is, I am starting to find out with kids, is just their body, anything outside of arm’s reach is not there” (ADI7). This impacted the handlers’ motivation to take care of their dog, which weakened the bond and companionship received, and potentially adversely affected the dog. Additionally, after placement it was realized that one handler lacked many of the prerequisite skills to work with an AD. The lack of skill was partly due to maturity, as the handler had not reached a high level of skills to manage her disability due to her young age. Although she was able to increase independence around school, this considerably decreased the overall amount of independence she gained.

### 3.2.2. Intellectual Disability

One handler had minor intellectual disability, which caused challenges in independently remembering to take care of the dog. Another handler experienced more severe intellectual disability, which caused many unforeseen challenges, such as lack of concentration, sending mixed signals to the dog, and lack of ability to retain knowledge about dogs. A lack of ability to concentrate on more than one task at a time hindered the handler and the dog’s safety. One carer noted: “He will be so concentrating on what he has to do with the dog that he will forget about road safety and things like that” (O2). Therefore, this handler always needed a carer with him. Support from additional carers and lack of assertiveness compared to a carer when delivering commands caused the dog to receive mixed signals regarding who the main care provider was. This was undesirable as ADs should primarily rely on the handler. It was also clear that the handler who experienced more intellectual disability lacked basic knowledge about dogs even one year after living with one and two years after working with an AD through the organization’s training program. During the final interview for example, the handler spontaneously asked how to tell if a dog was relieving itself or when to give the dog treats.

In both situations, where handlers lacked maturity due to age or experienced intellectual disability, the welfare of the dog was often maintained by a parent or carer being involved. Although this was necessary for the dog, this potentially delayed the AD-handler bond. Additionally, this involvement by other individuals hindered the amount of responsibility and independence the handler could gain from having the AD.

### 3.3. Social Environment

Most participants emphasized the impact the social environment and social support had on the success of the dog: “It’s a real community that needs to come together to work for this child, for them to live a full life. If you don’t have that from each direction, from each person that is involved, then it’s not as successful” (O7). When this support was not available, the handler experienced more challenges. Social environments in group homes or community day programs and relationships with carers caused the most challenges.

#### 3.3.1. Group Home and Community Day Program Environment

Group homes and community day programs caused major hindrances that delayed much of the bonding and integration of the dog into the handler’s daily life. These organizations had many concerns that they wanted addressed before they allowed an AD to attend:

“Their main concerns are OHAS [occupational health and safety], tripping hazards, [the dog] getting hurt by anybody that’s having some behavioral issues. They are concerned that there are some people there that might have a fear of dogs, so they are very concerned about upsetting and causing any extra stress”. (ADI2)

These concerns were valid, but existed primarily because none of these organizations had experience with a client having an AD previously. One such organization was also hesitant because they did not understand the impact that the dog could have on the handler's life: "they are sort of like 'what is [the dog] here for? [H2] has been coming for seven years, he hasn't needed a dog before, why does he need one now?'" (P2). This slowed integration of the dog into the handler's life, delaying many benefits. Additionally, as handlers who attended these locations had intellectual disabilities, they required assistance from the staff. Therefore, training the care staff to properly assist the handler with the AD was a challenge because the care staff was constantly changing, making it impossible to educate everyone who interacted with the handler on how to work with the dog. This created inconsistency in the training and led to the development of undesirable behaviours in the dog, which did not promote confidence in the dog with facilities that were initially hesitant to include the AD. This subsequently delayed socialization and companionship benefits the handler could receive.

### 3.3.2. Relationships with Carers

The relationships handlers had with certain carers caused many challenges, especially for those handlers who experienced cognitive challenges. Some of the challenges were due to the carers' lack of understanding or training regarding ADs. Often carers had personal beliefs about how dogs should be treated or trained, which differed from how ADs are trained. They often did not understand the reasons for the AD rules and therefore lacked consistency or failed to maintain the rules. Personal beliefs also impacted the handler-carer relationship. For example, one mother explained: "there was a guy from another organization that used to take [H2] out every Saturday. Soon as we said there was going to be a dog he said he wouldn't have the dog in the car" (P2). Consequently, this relationship ended. Individuals without cognitive impairments experienced far fewer challenges with carers regarding their dog. Although they may have carers for physical assistance, they were typically less involved in the care or support of the dog.

### 3.4. Dog Factors

Some dogs themselves also caused some concern, primarily through their inability to reliably perform the main function they were acquired for, such as alerting behavior, and immaturity at the time of initial placement.

#### 3.4.1. Inability of the Dog to Alert

Three of the dogs were acquired to work as medical or seizure alert dogs. Of these, one dog was still not trained to alert to the medical condition at six months post-placement, and the other two dogs were trained but were not alerting reliably after one year of working with the handler. Individuals involved in both case studies recognized that the dog's ability to respond to a medical event was more reliable than their ability to alert prior to the event. One mother described this as:

"We are more likely to pick up on [a seizure] than [the dog] is, and then what she does it, she responds to our behavior. She sees us going 'oh are you okay?' then she is like OH! Then she barks. So, it's delayed and it's reacting to our behaviors". (P1)

This was reported to occur in instances where the dog was out of sight of the handler (e.g., under a table). According to the instructors, however, this should not impact the dog's ability to alert.

The consequences of the dog not being able to alert reliably was that the handler's safety was potentially compromised. At the time of their interviews, all handlers had gained sufficient confidence to walk independently in their neighborhood with their dog. While this is a clear benefit of having an AD, if a medical event was to happen because the dog did not alert, the handler may be in more danger than previously as they may be further from a knowledgeable responsive individual. "She's not alerting before episodes, and I still am walking sometimes and like wheeling around; I guess that's



a little bit unsafe” (H6). Although this handler could recognize the danger, the other two participants with alert dogs had reduced cognitive ability and may not have been able to recognize the danger associated with leaving the care that carers provided before their dog was fully trained.

#### 3.4.2. Immaturity of the Dog

A few of the ADs were perceived to be immature when acquired. Most participants became accustomed to this as the dogs matured and found their space within the family. Other individuals had more difficulty dealing with an immature dog. This was partly due to their expectations:

“Even now [6 months after acquiring a dog], and certainly for like the first three or four months, if [H6] left the house with her, there was an awful lot of work done by [H6] to look after [the dog], rather than [the dog] effectively looking after [H6], which I thought was going to be the effect”. (P6)

This consequently increased the workload of the handler, who was already dealing with chronic and complex medical issues. This immaturity was perceived to considerably slow the process of integrating the dog into the handler’s life for this family, thereby delaying many benefits.

### 4. Discussion

The challenges identified in these interviews provide new insight into the AD placement experience. As mentioned previously, all participants in this study reported receiving many benefits since acquiring their AD, and the importance of these should not be underestimated. We do not want to suggest that any person with a disability should be prevented from accessing an AD should this be considered as a possible strategy to ameliorate the impact of their disability, provided that the dog’s welfare can be ensured. However, the results reported in this paper identified factors that may cause challenges after an AD placement, such as: the handler’s medical condition/s, cognitive ability, social environment, and dog-related factors. It is evident that these factors are predominantly out of the handler’s control. Nonetheless, they considerably hindered the training and integration of the dog into the handler’s life, which negatively affected the handler-dog bond, the responsibility and independence of the handler, and potentially the dog’s short and long-term welfare.

Variables associated with the handlers’ disabilities, such as their medical condition and cognitive ability, appeared to be very prominent. Individuals with comorbid, complex or changing disability conditions experienced more challenges than those with relatively predictable disabilities. Additionally, these disability-related variables directly contributed to the extent to which other challenges were experienced, such as those associated with the social environment or dog factors. For example, handlers with complex conditions experienced extended hospital admissions in which the dog was unable to accompany them; those who had intellectual disability attended community day care programs and experienced more time away from their dog. This interfered with the dog’s ability to assist them, as the bond took longer to form and the dog subsequently experienced difficulties learning to perform desired functions, such as alerting to medical conditions.

Similarly, handlers who lived in environments that were constantly changing, experienced more challenges than those in more predictable environments. Physical environmental changes contributed less than challenges due to the available social support in these environments. Typically, large social support networks are perceived to be more beneficial than having less social support [25]. In this study, however, individuals with small (typically informal) social support circles with very engaged members reported fewer challenges than those with many members who were constantly changing and had little investment in the handler. For example, individuals who employed carers or attended day programs had more formal support and experienced more challenges. Although these effects could be inherent to the nature of the disability, they did not facilitate integrating the dog into the handler’s life. For people with disabilities, various social support systems (formal vs informal) often do not communicate to coordinate support [26]. This brings challenges, as carers in these situations

find it easier to do things for the handler or the dog instead of taking the time to learn to assist and implement the AD properly. This is similarly reported in other situations, where carers also find it easier to do things for the individual rather than assisting the handler to learn how to use a new form of assistive technology [27].

It is well established that the more disabilities an individual experiences, the more difficult it is for them to use traditional forms of assistive technology [27]. Individuals who experience mental health challenges or intellectual disabilities as part of their comorbid conditions are also known to use fewer forms of assistive technology compared to those with other types of disabilities [28]. This is consistent with the findings of the current study. Individuals with complex disabilities, mental health challenges or intellectual disabilities found it more difficult to effectively use an AD than individuals without these conditions.

One might ask, therefore, why such people chose (or were advised) to acquire an AD. This is especially relevant since working with an AD is inherently complex compared to many other forms of assistive technology. One reason may be that these individuals and their families were desperate for assistance and had tried all other support options available to them [13]. Additionally, the handler or their family may have been told of the numerous benefits that the handler could receive, potentially without any discussion of the challenges that accompany working with an AD. That the handlers in this study did obtain considerable benefits from having an AD is not in question. Nonetheless, the challenges we observed contributed to reducing the benefits that were obtained and require careful consideration.

#### *4.1. Implications for Assistance Dog Organizations*

The results emphasized in this paper, reinforce organizations' need to comprehensively consider each prospective handler's disabilities and abilities. More consideration may need to be given regarding their medical challenges, cognitive ability, their environment and the support that potential handlers have available to them. By focusing more energy into understanding these factors, organizations may be able to enhance vulnerable handlers' experiences working with an AD.

In addition, we suggest that organizations responsible for training and placing ADs should take time to consider the initial expectations handlers and members of their support network have prior to the placement of a dog, as the organization should work to minimize unrealistic expectations before they influence the perceived success of the relationship. Unrealistic expectations may contribute to perceived success and satisfaction with the dog, potentially preventing dogs from being returned due to behavioral problems and temperament issues, [29,30]. This is particularly important when working with first time handlers, who are least likely to have a realistic understanding of dogs' abilities and behaviors. Dog selection is clearly always important and includes consideration for the ability and maturity of the dog, but again, this may be especially important for clients with more complex disabilities, who may be less able to deal with challenges, and for individuals who have not previously had any experience with an AD.

The factors identified should be considered from the organizations' perspective as well, as they contribute to the level of resources needed to be provided or the model used to integrate the dog into the handler's life. We noted that the organizations represented in the current study were required to maintain contact with handlers with complex needs for months or years longer than what was required for those without these challenges, in order to ensure the dog was performing sufficiently and that it experienced good welfare. Several handlers required many in-home visits and extensive ongoing support. In contrast, handlers without the challenges we identified commonly had only two follow-up visits with their organization after the initial placement period ended. For this reason, organizations supplying ADs may need to consider whether they have the resources and time available that complex cases require. They may need to consider altering their placement model, such as providing extensive initial training prior to the handler receiving the dog, or extra support throughout the placement



period, perhaps for the life of the dog. This may be especially important for individuals who experience complex disabilities, mental health challenges and cognitive impairment.

With this in mind, we advise caution for the many organizations that are being set up to provide ADs to persons with a disability. It is critical that these organizations have expertise regarding a client's specific disability and the effect of comorbid conditions. Some organizations already take these factors into consideration; some of our handlers reported that they were turned down by AD organizations because their case was too medically complex, or because the organization did not provide support for people with their specific medical condition or comorbid conditions. This may be appropriate, however it also makes it more difficult for these individuals to obtain an AD, and may result in their working with less experienced or less reputable organizations. Additional regulation is sorely needed worldwide in this field. Participating organizations have a responsibility to carefully consider whether an AD is the right form of assistive technology for a prospective recipient, and if they are the organization best suited to assist each person to achieve their goals.

#### 4.2. Future Directions

This paper draws on information provided by multiple types of individuals to obtain insight regarding the complexities that new handlers experience when working with an AD. The study included individuals who experienced a range of disabilities. However, not all disabilities that ADs have been trained to assist were represented and, therefore, future research should include other types of ADs as well. Additionally, only low participant numbers were able to be included, due to the intensive nature of the study. Due to time constraints, participants were interviewed at approximately six and twelve months after receiving their dog. Since ADs often work with a handler for approximately eight years [31], future research should look at expanding these time frames.

#### 5. Conclusions

This study explored the experiences of seven first-time AD handlers, six to twelve months after receiving their dog. Although many benefits were reported, as have been acknowledged previously, perceptions from family members, carers and AD instructors corroborated the handler's reported challenges. This paper demonstrated that there are many factors, outside the handler's control, that influence the challenges that they experience working with an AD. Organizations should consider these factors in relation to their clients and themselves to improve handler's experiences and thus the dog's welfare.

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### 6.3 Further Discussion

The critical finding from this work revealed that some challenges AD handlers experienced extend well beyond the initial transition period. These challenges are critical to note as some of them (e.g., hospital admissions) were unexpected or not explicitly discussed before they received the AD. Other challenges, related to the social environment, for example, were anticipated but not expected to be so prominent one year following placement. These challenges were particularly significant because they were predominantly outside the handler's control. Handlers also reported receiving substantial benefits, including benefits from the presence of a dog (Section 2.1), the relationship developed (Section 5.1) and trained benefits (Section 6.1). Importantly, many reported benefits could not be solely attributed to the dog, due to changing medications or other treatments that occurred throughout the study.

The combination of benefits and challenges that handlers experienced demonstrated that successful integration of an AD into a handler's life did not automatically enable them to increase their ability to live their best life. Rather, the transition process could take much longer than expected. According to Meleis' transition theory, employed in paper 4, there are five defined outcomes of a transition: mastery, fluid integrative identity, resourcefulness, healthy interactions and perceived wellbeing (Meleis, 2015). Since the outcomes, as the transitions theory describes, were not measured, I could only come to an overall evaluation from the experiences and perceptions described by participants. Consequently, I believe that all handlers in the presented case studies demonstrated some of these outcomes after one year working with their AD. Many handlers appeared to have completed the transition, but others had not. The length of the transition process demonstrated here is critical for

AD organizations to understand and account for when placing an AD and determining the amount of time some handlers could take to fully integrate the AD into their life.

#### **6.4 Summary**

The aim in this chapter was to create a deeper understanding of experiences handlers had working with an AD six months to one year after placement. This demonstrated that handlers were experiencing more benefits than they were previously. However, many challenges handlers experienced were still prominent after working with their AD for one year. It was also demonstrated that some handlers were in the transition process much longer than expected. Overall, these findings were significant because the challenges experienced were not expected to be so prominent one year after acquisition. The next chapter will explore the various contextual factors that impacted an AD's ability to assist a handler to live their best life. This exploration was accomplished by looking at the case studies over the year.

## **CHAPTER 7: Longitudinal analysis of contextual factors**

The previous three chapters (4, 5 and 6) explored eight case studies collectively at four distinct periods. Conducting the analyses across participants facilitated an understanding of commonalities and differences between experiences at each period. The analyses demonstrated that complex interactions between various contextual factors led to experiences of specific benefits and challenges, which appeared to have a strong influence on reported outcomes. Therefore, a closer exploration of these contextual factors was warranted. Developing a deeper understanding of interactions between contextual factors and outcomes may influence best practice for AD organizations and those seeking to integrate an AD into a handler's life. This understanding may ultimately assist a person to live their best life.

The aim in this chapter is to understand how various contextual factors influence my participants' experiences of acquiring and working with an AD. The four most prominent contextual factors were societal, social support, environmental and personal, which will be discussed in greater detail. To accomplish this, the evaluation of all four previously considered time points were explored together in greater depth. This analysis resulted in a paper submitted to *Qualitative Health Research* in August 2019 titled: "The influence of contextual factors on an individual's ability to work with an assistance dog," which is presented next.



### **7.1 Paper 6: The influence of contextual factors on an individual's ability to work with an assistance dog**

Gravrok, J., Howell, T., Bendrups, D., Bennett, P. (under review). The influence of contextual factors on an individual's ability to work with an assistance dog. Submitted to *Qualitative Health Research*, August 9, 2019.

Please note that the case study numbers have been removed at request of the journal.

A perspective on societal factors involves CS3 and CS8, social support involves CS1 and CS2, environmental factors involves CS5 and CS7 and personal factors involves CS6.



## Introduction

People with disabilities face many challenges, arising from their medical condition and the circumstances in which they live (Scharf et al., 2017). Challenges within modern societies include, but are not limited to, lack of social engagement (Jang, Mortimer, Haley, & Graves, 2004), stigma, discrimination (Ali, King, Strydom, & Hassiotis, 2016) and public access issues (Brucker & Houtenville, 2015). Some challenges related to specific medical conditions can be ameliorated with the use of assistive technology, such as a wheelchair, cane or wearable navigation system to assist a person around their environment (Wang et al., 2017), yet these devices can contribute to stigma or discrimination (Aranda, 2015).

One way to reduce the stigma and discrimination for people with disabilities is through support from organizations and socially supportive individuals in their community (Scharf et al., 2017). Assistance dogs (AD) may also play a role in decreasing public stigma around disability (Sanders, 2000) as well as providing direct benefits for the individual by supporting them to manage their disability (Audrestch et al., 2015). ADs are commonly praised for their ability to provide disability-specific benefits to their handler, such as leading them around obstacles (Craigon et al., 2017; Naderi, Miklósi, Dóka, & Csányi, 2001) or retrieving dropped items (Connolly, 2004; Herlache-Pretzer et al., 2017), resulting from an AD's specific training. ADs also provide other forms of assistance, such as companionship and social support, which can lead to physical, psychological and social benefits that increase the handler's overall wellbeing (Sachs-Ericsson, Hansen, & Fitzgerald, 2002). These benefits are well reported in the literature and have led to ADs becoming increasingly popular.

Despite their popularity, obtaining and working with an AD is not easy (Gravrok, Bendrups, Howell, & Bennett, 2019). Some individuals may wait up to three years to receive an AD from a provider (McLaughlin, 2013; Reinsfelder, 2006) and obtaining an AD often involves

40 a large financial investment (Wirth & Rein, 2008). Working with an AD is a long-term  
41 commitment, as the working life of an AD is generally about eight years (Lloyd, 2004). During  
42 the time a handler is living and working with their AD, they may experience ongoing challenges,  
43 although few studies have explored the holistic experience of working with an AD over time.

44 Commonly, AD studies explore experiences of handlers at one point in time. The  
45 information obtained from these studies has been valuable to demonstrate the numerous benefits  
46 that handlers receive from working with an AD. However, the field has typically relied on  
47 retrospective reports without repeated measures (Howell, Bennett, & Shiell, 2016; Sachs-  
48 Ericsson et al., 2002), where handlers describe their remembered perceptions of life before  
49 receiving an AD to compare this with their perceptions of life post arrival of the AD.  
50 Retrospective reports can interfere with recent experiences causing misremembering, which can  
51 lead researchers to erroneous conclusions (Schkade & Kilbourne, 1991), hindering their  
52 reliability. Longitudinal studies are increasing in popularity, but primarily incorporate survey  
53 designs (Sachs-Ericsson et al., 2002), which limit the contextual understanding of the  
54 experiences handlers have with their dog. More in-depth studies are needed to develop a  
55 comprehensive understanding of these experiences.

56 The aim in this article is to document eight first-time handlers' experiences of acquiring  
57 and working with an AD over time. Our investigation began before handlers received their dog  
58 so that we could explore their initial expectations, and it continued over the following year,  
59 allowing us to understand their experiences after they had been working with the dog for some  
60 time. Many of the insights we obtained at specific time points are published elsewhere (citations  
61 removed for blind review). This article goes beyond these other reports by drawing on the  
62 detailed personal narratives obtained from the longitudinal design, which allowed investigation

63 of individual handlers' experiences over time, and to explore how contextual factors impacted  
64 them.

## 65 **Methods**

66 This study was approved by (ethics approval removed for blind review).

### 67 **Participants**

68 Eight handlers were recruited from three AD organizations in Australia who were placing  
69 ADs with first-time handlers. Handlers included five males and three females who ranged in age  
70 from 10 to 43 years at the beginning of the study. Five different types of AD were represented:  
71 seizure alert dog, psychosocial AD, medical alert dog, guide dog and mobility dog. To further  
72 increase understanding of the handler's experiences, obtain rich data and to triangulate the  
73 findings (Fusch & Ness, 2015; Graneheim, Lindgren, & Lundman, 2017), other individuals were  
74 also recruited, including: parents (n = 8), AD instructors (n = 6), carers (n = 1) and other  
75 individuals (n = 2) who knew the handler well.

### 76 **Materials**

77 Semi-structured interviews were conducted with participants to gain in-depth knowledge  
78 about their expectations and experiences working with an AD. Interview questions were initially  
79 formulated from information in the AD literature regarding benefits and challenges (Guest,  
80 Collis, & McNicholas, 2006; Wiggett-Barnard & Steel, 2008). However, as the interviewer  
81 became familiar with the participants over time, rapport was built, and the questions became  
82 individualized to each participant based on previous interactions.

83 Throughout the interviews, participants were encouraged to lead the conversation. Some  
84 handlers experienced disabilities which impacted their verbal communication. Therefore, other  
85 individuals who knew the handler well were also involved in interviews. These individuals  
86 rephrased the question or prompted the participants with a more specific topic that they knew the

87 participant would be able to discuss in more depth. This strategy facilitated the continuation of  
 88 the conversation. These individuals also participated in their own interviews.

## 89 **Procedures**

90 Written informed consent was obtained from all participants and parental consent was  
 91 obtained for child participants prior to the initial interview. Interviews were conducted at four  
 92 times: before the handler received their AD, and subsequently at one month, six months and 12  
 93 months after they had received their AD. Interviews ranged from 30 to 90 minutes and occurred  
 94 over the phone or in-person depending on the participant's distance from the interviewer. In-  
 95 person interviews were conducted at a location familiar to the participant, such as their home,  
 96 local cafes, or parks.

## 97 **Analysis**

98 Interviews were audio recorded and transcribed by the interviewer. Transcripts were then  
 99 de-identified and uploaded to QSR International's NVivo 10 qualitative data analysis software  
 100 where inductive content analysis was performed to develop themes (Elo & Kyngäs, 2008;  
 101 Graneheim et al., 2017; Hsieh & Shannon, 2005). Coded transcripts were read multiple times to  
 102 ensure all the codes were consistent (Zhang & Wildemuth, 2016) and in-depth discussions  
 103 involving all members of the research team were used to enhance the validity of the analysis.

## 104 **Results and discussion**

105 The interviews revealed that first-time AD handlers' experiences were influenced by four  
 106 main contextual factors: societal, social support, environmental and personal factors. While not  
 107 used as a foundation for our analyses, which used inductive rather than deductive content  
 108 methods, these contextual factors are known to be prevalent in the disability community and are  
 109 considered crucial to the experience of disability (Watson, 2012). Each factor is described in turn



below. Analysis of each factor begins with results and experiences of participants over time, then a general discussion of the concept in the disability and AD contexts.

#### **Contextual factor 1: Societal influences**

Societal influences were prevalent for all AD handlers. Before receiving the dog, the most common theme discussed included fear of being denied public access. After receiving the AD, however, this rarely occurred. Rather, prominent challenges arose from people constantly wanting to pet and interact with the dog. Some handlers found this very distracting, while others enjoyed the interaction. These two perspectives are described next.

#### **Perspectives on societal factors.**

One family received an AD for their young son who was confined to a wheelchair. Initially, they believed there would be minimal challenges from people in public with the dog, especially in their local neighborhood where everyone knew the family well and where the dog would be identifiable as an AD. The mother reiterated multiple times: “I don't think [the community] will react anyway. I think people will be fine [...] I don't think anyone is going to react some special way.”

This expectation was unrealistic and may have arisen because this family had never owned a dog before and may have been unaware of the social catalyst effect that dogs provide (McNicholas & Collis, 2000). Further reinforcing the unrealistic expectations, during the initial placement period the mother reported positive experiences working with the instructor and AD in public around the AD facility. In contrast, the first weekend with the AD at their home, alone, the family experienced recurring challenges within their community. The mother was astounded by the number of people that approached them with requests to pat or attempts to distract the dog and wanting to chat with the handler.

133           The experiences leading up to the acquisition of the AD contributed to this mother's  
 134 expectations regarding society's reaction to her son and the AD. The discrepancy between the  
 135 expectations and reality was overwhelming for the family. The mother expressed this as: "For  
 136 the next eight years [...] I didn't want to have to say to people 'can you not touch the dog? Can  
 137 you not pat the dog? Can you not talk to the dog?' It just wasn't going to happen." Their  
 138 expectations were self-identified to be unrealistic within the first weekend working with the AD  
 139 alone. After a family discussion, they decided to return the dog to the AD organization.

140           On the other hand, a handler from the same organization, who received the same basic  
 141 training and was also confined to a wheelchair, enjoyed the social interactions that her AD  
 142 provided. Rather than people avoiding eye contact with her, she found that they initiated  
 143 conversation, which she appreciated as she was an outgoing person. Additionally, this handler  
 144 had lived with a dog previously and was more aware of the social catalyst effect that dogs  
 145 provide; therefore, she initially looked forward to this benefit. Other handlers also found the  
 146 social interaction within society to be mostly positive, but reported that some days they just did  
 147 not feel like interacting with other people, which made it difficult. This handler also recognized  
 148 these challenges in dealing with the public, but was possibly more prepared to stand up for  
 149 herself. She stated:

150           "Some of the challenges can be people interfering, getting involved with my space and  
 151 wanting to feed her or wanting to give [a pat], yeah there can be challenges in that  
 152 respect, just from the general public. I have had a couple challenges where I've been  
 153 asked not to come in to places because I've had her, and so I've been able to you know  
 154 pull the card the license [laugh], you can't not allow me into this facility, but it's only  
 155 happened twice and both times I've just stood my ground and explained to them [and I  
 156 was allowed to enter]"

157 This denial of public access, requiring explanation of the laws before being allowed in, was a  
158 similar experience to what other handlers reported.

159 **Discussion on societal factors.**

160 These examples demonstrate the varying influence that societal factors can have on first-  
161 time handlers' experiences. These participants demonstrated that societal influences,  
162 expectations and potentially being a first-time dog owner could have a considerable impact on  
163 the success of the placement. Interactions within society were expected to be challenging  
164 initially, as participants expected to be denied access occasionally. However, a more pressing  
165 problem for participants was the lack of etiquette and respect shown by the general public toward  
166 their AD. Although this was expected in most instances before receiving their AD, these  
167 interactions were more frequent and annoying than expected. Handlers and their families reacted  
168 in different ways to these interactions, some with ease and willingness to interact, while others  
169 became annoyed. Most handlers became accustomed to these interactions over time. To prepare  
170 the handler, discussion prior to receiving an AD should include developing realistic expectations  
171 for types, and amount, of interactions they will encounter within society.

172 Strikingly, unrealistic expectations led to one AD being returned, which previous  
173 research has never reported as a reason for returning an AD, to our knowledge. Typically,  
174 returning an AD has been attributed to dog behavioral problems, temperament issues, poor match  
175 or poor timing of the placement (Burrows, Adams, & Millman, 2008; Lloyd, Budge, La Grow, &  
176 Stafford, 2016). While these challenges are likely to prevent the AD from working successfully,  
177 further understanding of unsuccessful placements, especially related to unmet expectations, is  
178 essential, as an ineffective AD relationship can contribute to decreased quality of life for the  
179 handler (Lloyd et al., 2016). It is possible that this case was unique, but this cannot be confirmed,  
180 given the small amount of existing evidence around this topic.

181           Although not prevalent for our handlers, societal influences are most commonly  
 182   discussed when individuals are denied public access. This discussion frequently involves places  
 183   such as, restaurants, shops, public transport and festivals (Fairman & Huebner, 2001; Valentine,  
 184   Kiddoo, & LaFleur, 1993; Winkle, Crowe, & Hendrix, 2011). This occurs despite the fact that it  
 185   is unlawful in many places to deny an AD handler entry, as indicated, for example, by the  
 186   Disability Discrimination Act in Australia ("Disability Discrimination Act," 1992) and  
 187   Americans with Disabilities Act in the United States ("Americans with Disabilities Act," 1990).  
 188   Therefore, education for society is vital, as it could potentially minimize negative societal  
 189   experiences by AD handlers. Additionally, educating the handler that these situations may occur  
 190   and how to overcome these situations may enhance their experience as an AD handler.

191           These considerations are important as the disability community in general, not just  
 192   handlers, have recognized societal influences as contributing to an individual's wellbeing (Frier,  
 193   Barnett, Devine, & Barker, 2018). Societal influences often have a wide-reaching negative  
 194   impact and include cultural, social or environmental barriers that exacerbate an individual's  
 195   experience of disability (Dunn & Andrews, 2015; Oliver & Barnes, 2010; Watson, 2012).  
 196   Examples include consideration for public access, attitudes towards disability, or government  
 197   funding for disability support programs. In some places, these barriers have been perceived to  
 198   decrease in recent years for people with disabilities (Frier et al., 2018); however, within this  
 199   study, societal influences remained challenging.

## 200   **Contextual factor 2: Social Support**

201           Social support was vital to the success of the AD-handler team for many handlers. This  
 202   included social support provided by the dog and social support from supportive individuals to  
 203   learn to work with their AD. The later will be emphasized with reference to specific participants'  
 204   experiences of positive and negative impacts of support from important others.



205           **Perspective on social support.**

206           Social support from other individuals was critical to one handler due to the nature of his  
207           disability, which involved borderline IQ, severe anxiety and experiencing psychosis. He was not  
208           socially isolated as he was living in a group home and attending community day programs,  
209           where he interacted with many supportive individuals who were paid or unpaid and were  
210           consistently (e.g., his mother, AD instructor and primary carer) or inconsistently (casual carers)  
211           involved in his daily life. These individuals were crucial after he acquired a mental illness, as he  
212           was utterly dependent on them and often received one-on-one support whenever he left the group  
213           home to ensure his safety in the community and at community day programs.

214           Accommodating his disability, the AD organization provided support to the handler in  
215           the form of weekly one-hour training sessions for one year prior to placement. This involved  
216           helping him learn about managing an AD. Although these training sessions occurred both at his  
217           group home and throughout the community, not all of his carers had a chance to see him work  
218           with and learn about ADs with the instructor. It was feared, and it eventuated, that the carers  
219           without this experience would bring their own ideas and experiences into working with the  
220           handler and his AD, providing him with misinformation or not following the rules, consequently  
221           increasing his anxiety. The instructor explained the dichotomy as: “the staff that know him really  
222           well are good, but they have a lot of casuals. They are the ones he will probably have to worry  
223           about, that they are not going to interfere too much in what he’s doing with the dog.” As the  
224           instructor’s time was limited at the group home, the primary carers and his mother were required  
225           to relay all the relevant information to casual carers. However, this was challenging as these  
226           individuals were constantly changing, had no experience with ADs, and did not know what to  
227           expect. Therefore, the day programs had major concerns about allowing the AD to attend.

228           One month after receiving the AD, the handler was working to integrate the dog into his  
 229 life at the group home. Although the AD organization set up many processes and procedures to  
 230 make the transition as smooth as possible, they still experienced many expected challenges. As  
 231 the AD instructor was only available weekly for one hour, there were many opportunities for the  
 232 handler to receive inadequate or conflicting information, which he would not receive if he lived  
 233 in a family home. This was described by his mother: “[it is] hard for him with any  
 234 inconsistencies in what he is told, so when you are in a residential house like this with a lot of  
 235 different workers, it’s quite hard to maintain consistency, I think it’s difficult.”

236           One month post-AD acquisition, the day programs did not allow the AD to attend. This  
 237 resistance was primarily due to the day program coordinators’ requiring additional funding from  
 238 a government disability support agency to pay an additional support worker to work one-on-one  
 239 with the handler before he could bring his AD to the day program. This was a prolonged process,  
 240 which hindered their bonding as the handler and dog spent much time apart. However, his  
 241 mother’s continual persistence and support, facilitated close communication with all the  
 242 handler’s support network, and was vital to the integration of the AD into his life.

243           Six months post-acquisition, the challenge with the day program was still not resolved, as  
 244 emphasized by the AD instructor:

245           “[the day programs] put up a lot of barriers, they have a lot of other things to think about  
 246 so I understand where they are coming from but I would have liked to move this a lot  
 247 quicker, [...] his mum is good at maintaining the program, [...] if it hadn’t been for his  
 248 mum pushing, I don’t think it would have happened.”

249           At one year, the AD was more integrated into the handler’s life as the AD was attending  
 250 three out of the four days at the day program. Additionally, the instructor was still working with  
 251 the handler one day a week and his mother was still heavily supporting him with his AD.



252 Throughout this entire process, the support from his mother was indispensable. In contrast,  
253 members of the formal but primarily casual support network hindered the integration process. In  
254 general, the importance of this type of support was most prevalent for handlers with intellectual  
255 disability or who were young.

256 Another handler, who experienced seizures and received the same amount and type of  
257 training prior to and after receiving the dog as the handler discussed above, had similar support  
258 from family, but had more positive support from casual carers working in the day programs that  
259 he attended. This handler also slowly integrated the dog into these programs, however, this  
260 handler had a higher cognitive ability and was able to control the AD without one-on-one  
261 support, which potentially relieved some of the stress from the day program coordinators.  
262 Initially, this was challenging as the programs had to balance the handler's needs and the needs  
263 of other participants. His mother described this as:

264 "There is a fine line between letting [son] be independent but then encroaching on  
265 someone else's space as well, who might not be familiar with the dog, [but] it defeats the  
266 purpose [of the AD] if a worker has to go with [son everywhere]."

267 This day program found the appropriate balance of supporting the handler and letting him have  
268 independence much sooner than the other day program.

269 Additionally, all handlers reported receiving social support from their dog as well. This  
270 included a lot of companionship and emotional support. Some handlers with alert dogs received  
271 informational support, while others received instrumental support in the form of guiding around  
272 obstacles or picking up objects. These socially supportive functions from an AD are well known  
273 and therefore not discussed in depth.

## 274           **Discussion on social support.**

275           The importance of social support in the disability context is widely recognized (Carlson  
276   & Miller, 2017; Chronister, Chou, Fitzgerald, & Liao, 2016), and is often necessary for people  
277   with disabilities to manage activities of daily living (Anderson et al., 2017). Social support  
278   involves emotional (nurturance), companionship (sense of belonging), instrumental (tangible),  
279   and informational (advice) support (Cohen, Underwood, & Gottlieb, 2000; Flannery Jr, 1990; B.  
280   R. Sarason, Sarason, & Pierce, 1990; I. G. Sarason & Sarason, 1985), which these handlers  
281   perceived their AD to provide. Within the AD community, improved social support is commonly  
282   discussed as a direct (arising from the AD; Burrows, Adams, & Spiers, 2008; Lane, McNicholas,  
283   & Collis, 1998) or indirect outcome of having an AD (arising from interactions because of the  
284   AD; Guest et al., 2006). Both direct and indirect forms of social support were reported to be  
285   provided by the ADs.

286           Human social support was also needed for handlers to successfully integrate the AD into  
287   their life, as demonstrated above. This support may be particularly relevant for handlers who  
288   need extra support due to age, cognitive impairment, or complex medical challenges. Many  
289   individuals can provide this support and, in general, social support networks for people with a  
290   disability are composed of both formal and informal support. Formal support arises from service  
291   providers, funders, community programs and state departments, while informal support arises  
292   from people such as family, friends, neighbors, churches, etc. (Varda & Talmi, 2018). Primary  
293   sources of social support for people with disabilities are typically informal, and are often  
294   preferred over formal support (Varda & Talmi, 2018). However, as disabilities become more  
295   complex, perhaps due to comorbid disabilities, formal support is often required (Varda & Talmi,  
296   2018). Having a well-integrated formal and informal social support network is extremely  
297   valuable in the disability sector, helping to achieve greater physical, psychological and  
298   behavioral health outcomes (Varda & Talmi, 2018).

299           The handlers in our study often received support from a complex network of formal and  
300 informal socially supportive individuals. However, some support workers caused challenges for  
301 handlers because they did not have sufficient training with the AD and provided misinformation  
302 to the handler. In these instances, the handlers often relied on their informal supporters for  
303 assistance, which predominantly added pressure to parents (Rolland & Walsh, 2006). Successful  
304 integration of the AD into both formal and informal support networks was imperative to the  
305 functioning of the AD-handler team and was partly attributed to the quality of communication  
306 between support providers. Facilitating this communication was often challenging for  
307 participants, which could be expected, as people with disabilities formal and informal support  
308 lacks communication in other contexts (Varda & Talmi, 2018).

309           Overall, human social support was instrumental in successfully integrating the AD into  
310 each handler's life. As was demonstrated above, some individuals were perceived to be more  
311 valuable than others. This difference was potentially due to the degree of investment that each  
312 support provider had in the wellbeing of the handler, and their knowledge around ADs.  
313 Therefore, it is preferable that all components of the handler's social support network be  
314 committed to successfully integrating an AD into the handler's life, know the purpose of the AD  
315 and rules around the dog as determined by the AD organization.

### 316 **Contextual factor 3: Environmental factors**

317           Throughout the study, environmental factors were more prevalent for some individuals  
318 than others. This related to the handler's general ability to control their environment, typically  
319 based on their age or nature of their disability. The two vision impaired handlers in this study  
320 best reflected these issues, as they experienced the most challenges within their environment.

321           **Perspective on environmental factors.**

322           One handler was an adolescent female who had been blind since birth. With the support  
 323 of family and various members of her extensive support network, she was determined to live  
 324 independently as “an active blind person.” This context appeared promising as she was raised in  
 325 an incredibly supportive home and attended a supportive public-school. The other vision-  
 326 impaired handler was a young adult who had recently become completely blind, and he was  
 327 working instead of attending school.

328           Prior to receiving the AD, both vision impaired handlers discussed their environment  
 329 concerning a lack of control and environmental safety issues, especially around public places.  
 330 They were concerned about walking into objects, tripping over potholes, and the cane stabbing  
 331 them in the stomach or hitting other people. Before receiving her AD, the younger handler was  
 332 preparing to move from primary to secondary school, which involved challenges due to the novel  
 333 environment and the variability of object placement. This included movement of tables and  
 334 chairs in the new school’s open plan layout, which could cause physical dangers to her such as  
 335 tripping over objects. Although the risks were recognized, her mother described the importance  
 336 of her daughter gaining independence in different environments, especially as she was maturing  
 337 into a young adult.

338           The young handler received her AD during a school break and primarily worked with the  
 339 AD from home for the first few weeks. After three weeks, she began attending school with her  
 340 AD. Two months post-acquisition, she emphasized the annoyance and suffocation of having the  
 341 AD accompany her constantly. The constant physical connection to the AD was perceived to  
 342 eliminate the one area of independence she had previously, within her home.

343           The dog appeared to adjust to his new home and school environment quicker than the  
 344 handler adjusted to having a dog. During this transitional period, two months after AD



345 acquisition, the handler still found it difficult to navigate school but perceived that it was easier  
346 with her AD: “if I went back to the cane tomorrow, when I have my maths class, I wouldn’t be  
347 able to find it. I just tell him to find maths and he will find it.” This assistance from the AD was  
348 expected to grow her independence in her physical environment at school.

349         Other students promptly adjusted to having the AD at school, which was attributed to the  
350 AD organization sufficiently preparing the school. Consequently, social interactions with  
351 students became easier. The handler felt more in control of her social environment and social  
352 situations, and she made new friends: “I get more attention from the children at school, that I  
353 never got before, mum said they used to stare at me without saying anything because the cane  
354 made me unapproachable, so to speak, whereas with [the dog] it’s different.” This was a positive  
355 experience for her.

356         Six months after the acquisition of the AD, the handler was no longer experiencing  
357 challenges with the AD in her home environment and she was comfortably navigating her school  
358 environment independently, although even after one year she was not independently working  
359 with the AD in the community. The older handler was working with his dog independently in the  
360 community after one month. He commented that his ability to navigate his community  
361 substantially increased:

362         “When I had my cane, I was really slow at walking, it would probably take me about ten  
363 to fifteen minutes to walk up just a short block, and now I can cross three roads and get to  
364 my house within six to eight minutes. So, it’s really increased my speed and confidence  
365 and everything.”

366         One year after acquiring the AD, both handlers were able to see the benefits that their ADs were  
367 providing in both the physical and social environment, where they described increases in  
368 independence, mobility and new friendships.

369           **Discussion on environmental factors.**

370           For people with disabilities, physical environmental control is often limited or not  
 371 possible (Bodde & Seo, 2009; Deegan, 1992). Due to a lack of cognitive ability or age-related  
 372 factors, individuals may not be able to make certain decisions to keep themselves safe within  
 373 their environment. The lack of physical environmental control, due to these disability-related  
 374 factors, can sometimes be rectified through various forms of assistive technology, such as ADs.  
 375 These resources are increasingly being used by people with disabilities to enhance their ability to  
 376 live independently in their environment (Wellings & Unsworth, 1997). This is important as  
 377 assistive technology can help keep people with disabilities in their homes instead of institutional  
 378 care (Wellings & Unsworth, 1997). Maintaining or gaining control over an individual's  
 379 environment is empowering (Finlay, Walton, & Antaki, 2008) and crucial, as decreased  
 380 perceived control can lead to reduced self-esteem (Rodin & Langer, 1980).

381           Vision impairment is one type of disability that commonly results in a person  
 382 experiencing a lack of environmental control (Guerreiro, Ahmetovic, Sato, Kitani, & Asakawa,  
 383 2019; Stevens-Ratchford & Krause, 2004), as these handlers demonstrated. An exception may be  
 384 within the home, where a person with vision-impairment can be independent, without the use of  
 385 assistive technology (Keeffe, Lam, Cheung, Dinh, & McCarty, 1998). However, adults with  
 386 vision impairment who employ ADs (guide dogs) report receiving benefits that enable them to  
 387 navigate other environments independently (Wiggett-Barnard & Steel, 2008). Young people with  
 388 vision impairment, however, are often unable to acquire an AD and be independent due to their  
 389 age, lack of maturity, and not-yet-developed orientation and mobility skills (Wolffe & Sacks,  
 390 1997), which may cause the discrepancy reported in participants' ability to navigate their  
 391 environment after working with their AD for a year.



Environmental challenges are also present for people with other forms of disability besides vision impairment. Individuals who had less control over their physical environment due to disability-related factors often experienced more challenges as much of the situation was controlled for them. For example, the control that the day programs and carers had, as demonstrated in conceptual factor 2 – social support, contributed to the slow integration of the AD into the handlers' lives. Additionally, physical environmental influences often create barriers that limit people's social environment and societal participation (Whiteneck, Gerhart, & Cusick, 2004). Becoming more integrated into the social environment or community and feeling a sense of belonging is essential as it can increase emotional satisfaction and wellbeing (Stevens et al., 2018).

Overall, most handlers experienced challenges and lack of control within their environment before receiving an AD. After AD acquisition, however, they were able to gain more control over and confidence within their physical and social environments. For young handlers, an increase in independence within the physical environment was not as prevalent as for adult handlers with average cognitive ability.

#### **Contextual factor 4: Personal factors**

Personal factors were prominently discussed throughout the interviews, especially relating to how the AD would or did affect their experience of disability. Beyond this it became apparent that personal factors such as motivation, resilience and grit were important for handlers to have when working with their AD. These concepts are briefly described, then a description of participants' experiences follows.

Motivation is concerned with activities individuals use to pursue a particular goal (Heckhausen & Heckhausen, 2018). Intrinsic motivation arises from natural interests and are perceived by the individual to be controlled by themselves (Deci & Ryan, 2009). Achievement

416 motivation, by contrast, relates to performance on a task in which the outcome is often success or  
417 failure (Wigfield & Cambria, 2010). Resilience is having the ability to resist being damaged by  
418 adversity or being able to “bounce back” after the adversity (Harms, Brady, Wood, & Silard,  
419 2018). One protective factor which increases an individual’s ability to be resilient, is having grit,  
420 which is the tendency to persevere through challenges with a passion for obtaining long-term  
421 goals (Harms et al., 2018).

422 **Perspective on personal factors.**

423 One participant was a young adult with a rare and complex medical condition that  
424 involves seizures, sudden autonomic changes, mobility impairment and mental health challenges.  
425 As her condition is so rare and complex, limited resources exist to assist with her disability, yet  
426 she had an ambition to reclaim control of her life. Obtaining an AD was her final option and was  
427 expected to help her to become more independent. Independence was important because she was  
428 often housebound without the assistance of her mother, her primary carer.

429 Prior to the acquisition of the AD, the handler expressed motivation to acquire an AD  
430 resulting from a longing for control and autonomy within her environment, as she was currently  
431 experiencing an extended stay in the hospital. This motivation led to optimism regarding the  
432 perceived abilities that an AD would be able to provide her. Her mother, however, was more  
433 sceptical of the benefits: “I’m not quite sure how [an AD] would work and I’m not completely  
434 confident that it will, particularly now she seems to be more wheelchair bound, but that could  
435 change.” This lack of confidence arose from the complex nature of the medical condition as well  
436 as their family never having lived with a dog.

437 Initially learning to work with an AD was a tremendous change for the handler and her  
438 family, and brought many challenges. One month after acquiring the AD, the handler struggled  
439 with the variable nature of her condition and the change in lifestyle required to become a

440 handler. Despite this, the handler was motivated to learn to do as much as she could. Finding the  
441 balance between managing her condition and learning to work with the AD was a challenge as  
442 she had to allocate her energy resources to the dog instead of caring for herself. Sometimes she  
443 reported being overzealous in the amount of energy that she perceived she could spend on  
444 working with the AD. This occasionally resulted in mental breakdowns when working with the  
445 instructors. The handler described a few instances of this, including:

446        “One time, I was having an autonomic episode, and she alerted to it, so I had to reward  
447        her through my episode and I remember thinking ‘this is really shit.’ I want to focus on  
448        me right now instead of focusing on her.”

449 This statement demonstrated a lot of resilience and grit, as she knew this was what she had to do  
450 to achieve her long-term goals with the AD, even when her body physically resisted.

451 Additionally, her motivation and belief that the dog eventually would change her life, kept her  
452 involved in training, even when she did not want to:

453        “I’ve had to be motivated and make myself motivated to do the training and that’s been  
454        really difficult. Especially this past week, I’ve been feeling really unwell, but, having to  
455        force myself to stay motivated, and actually see it as an investment in her training and in  
456        our life together.”

457 This motivation and grit to work with the AD successfully in the future, despite her  
458 current health, kept her going, demonstrating that her motivation led to resilience. Six months  
459 after acquiring the AD, the handler and her mother felt conflicted as they could see the benefits  
460 the dog was providing and the potential for the dog to provide even more in the future; however,  
461 the challenges in training were immensely taxing and heavily impacted the acquisition of these  
462 benefits. For example, the significant amount of time the handler had spent in hospital in the  
463 previous year caused some challenges and training that they were still working through at six

464 months post-acquisition. However, they also recognized many benefits that the handler was  
465 receiving from her AD, such as increased mobility, emotional support, sleep cycle  
466 improvements, responsibility for taking care of the dog and independence. Therefore, the  
467 resilience and grit paid off. Her mother was proud of her accomplishments and described how  
468 resilient her daughter was:

469        “I’ve learned how often she will put other people before herself. She will think about  
470        [the dog]’s comfort before her own. Her determination, just her bravery, yeah, just her  
471        days when, I think if I was [daughter] I would give up, and sometimes she does, but so  
472        often she gets up again and again.”

473        Overall, both the handler and mother recognized the benefits that the AD was able to  
474        provide. However, the challenges associated with her medical condition exerted tremendous  
475        control over the handler’s life, such that she found it difficult to fully integrate the AD into her  
476        life and consequently experienced many mental and physical challenges throughout this process.  
477        Her motivation, resilience and grit kept her from returning the AD.

478        The younger handlers in general had more challenges maintaining motivation and grit to  
479        work with their AD initially. Rather, they were reported to be more focused on themselves  
480        instead of the dog and, therefore, was not always motivated to provide care for the dog. An  
481        instructor of a young handler described this nicely:

482        “in that first 6 months or so, there were two times we had to have the conversation to say  
483        ‘well do you want [the AD]?’ If we don’t move forward, he is going to have to go back  
484        [to the organization, and an AD] might not be right for you at the moment. So, we’ve had  
485        to have really tough discussions with a child. She doesn’t have any perception of forward  
486        thinking in how this is going to relate to her at this stage.”



487           **Discussion of personal factors.**

488           People with disabilities commonly experience personal challenges that affect their  
 489 experiences of disability. Personal disability-related factors, such as cognitive ability, mental  
 490 health and the stability or complex nature of their medical condition, are essential to understand  
 491 as these can cause challenges when acquiring an AD and may hinder the integration of the dog  
 492 into their life (Gravrok et al., 2019). Within the AD literature, these personal factors are rarely  
 493 explicitly discussed, yet underlie the handler's ability to work with an AD. Therefore, factors  
 494 such as disability status, along with motivation, resilience and grit, are important to consider.

495           Motivation within AD studies is often discussed as an outcome, resulting from the dog.  
 496 This includes motivation to go places (Davis, Nattrass, O'Brien, Patronek, & MacCollin, 2004;  
 497 Ikenaga, Sakai, Sakurai, & Takayanagi, 2019) or engage in social activities (Lessard et al.,  
 498 2018). Motivation to obtain an AD has also been considered, including motivation due to  
 499 dissatisfaction with current assistive technology (Whitmarsh, 2005) or personal need for the AD  
 500 as a tool (Wiggett-Barnard & Steel, 2008). Obtaining an AD may be the last resort for some  
 501 handlers, motivating them to ensure a successful placement.

502           In the AD community, motivation, especially intrinsic motivation, is central to the  
 503 success of the AD placement (Lloyd, 2004). It has been proposed that motivation to apply for an  
 504 AD may indicate that the prospective handler accepts their disability, and has optimism and  
 505 determination to create a better future (Lane et al., 1998). However, one study has demonstrated  
 506 that motivation to succeed appears different from motivation to acquire an AD. The latter was  
 507 significantly related to the handler's perceived need for the AD, while motivation to succeed was  
 508 strongly related to overall compatibility with the AD (Lloyd, 2004). This understanding is  
 509 important as compatibility with the AD appears vital to the success of the placement (Lloyd et



510 al., 2016); confidence, motivation (as an outcome) and self-esteem decrease, if a person is placed  
 511 with an unsuitable dog (Lloyd, 2004).

512         Although the motivation to succeed is essential, the challenges handlers experience with  
 513 their AD may suppress motivation. Therefore, motivation may not be enough to work with their  
 514 dog successfully. Perhaps handlers also need resilience, which is not often discussed in the  
 515 disability literature, as the study of resilience is often associated with the idea of returning to  
 516 “normal” in a given context (Runswick-Cole & Goodley, 2013). People with various medical  
 517 conditions or disabilities are often unable to live a “normal” life or maintain a consistent  
 518 “normal” state. However, returning to or exceeding a state that is normal *for them* is an  
 519 appropriate equivalent.

520         To our knowledge, the study of resilience has never been discussed in the AD context.  
 521 However, as demonstrated, it appears that ADs could have the ability to prompt a person’s  
 522 resilience if the handler has the proper motivation to work with the dog and appropriate supports  
 523 are in place. Indeed, resilience may enhance the integration process and be an essential quality to  
 524 successfully implement an AD into an individual’s life, especially for people with complex or  
 525 changing conditions. Resilience was demonstrated through handlers’ determination and grit to  
 526 continue the training even after challenges arose.

527         Grit was demonstrated when handlers identified that successfully working with an AD  
 528 was a long-term goal for them, and despite the adversities and setbacks they may face, they  
 529 continued to work toward their goal. This was more difficult for younger handlers to understand.  
 530 Grit appeared especially important for individuals who experience relapsing or episodic illness or  
 531 find it difficult to transition between crisis and non-crisis periods, as there is a strain in the  
 532 uncertainty of knowing when it will occur (Rolland & Walsh, 2006). These individuals can still  
 533 have long-term goals, so grit is an important personal factor for people with disabilities to have.

534 Overall, disability related personal factors are important considerations when placing an  
535 AD, as they may cause ongoing challenges. Within the presented case studies, participants  
536 demonstrated that having personal factors of resilience, grit and motivation can assist a handler  
537 to implement the AD into their life successfully. The balance between the personal factors  
538 relating to challenges from the disability and positive factors such as motivation, largely  
539 contributed to a handler's overall experience and outcome.

#### 540 **Overall implications for AD organizations**

541 These findings demonstrate the importance of contextual factors in the acquisition and  
542 integration of an AD into a first-time handler's daily life. The societal, social support,  
543 environmental and personal factors influence one another and contribute to the overall  
544 experience a handler has. These factors should be carefully considered by AD organizations  
545 before and monitored throughout placement as they are often outside of the handler's control and  
546 not directly related to the AD. Nonetheless, they may impact a person's success as an AD  
547 handler.

548 Organizations should aim to minimize the challenges handlers experience to produce an  
549 overall positive outcome for their clients. The outcomes could be enhanced through a  
550 fundamental understanding of these contextual factors for each client individually. Then  
551 organizations could work to educate handlers to develop realistic expectations prior to receiving  
552 their AD. This includes representative experiences with their AD during placement and training.  
553 As one handler demonstrated, interactions within the community around an AD organization  
554 may be qualitatively different than experiences in their home environment, which may be less  
555 accustomed to seeing ADs. The difference in experiences is important to minimize as the  
556 discrepancy between expectation and experience could lead to disappointment. This discrepancy  
557 is especially relevant for handlers who have never lived with a dog before.

558 Additionally, as many of the participants in this study demonstrated, by understanding  
 559 these factors for each client, specific training before receiving their dog, work to educate the  
 560 community and their social support network can commence to ease the transition period. This  
 561 initial preparation may enhance handlers' experiences and potentially minimize follow up work  
 562 needed by the AD organization. Table 1 presents specific considerations that AD organizations  
 563 need to consider before and after placing an AD.

564 Table 1.

565 *Contextual factor considerations for assistance dog (AD) organizations*

Contextual Factor	Before acquisition	During transition and long term
Societal	How common are ADs where the handler lives? What locations does the handler frequent that may need extra education? (e.g. schools, day centers, day programs) How can these locations or the town be educated more? (informational flyers, community presentations) Practice talking to people about the AD in situations where the handler wants to engage and when they do not want to engage.	How is society reacting to the handler and dog when in public? Has the handler been denied access anywhere? How can this location and similar locations be educated more?
Social support	How much support will the handler need? Who will provide the most support to the handler? Who will interact daily with the handler? How can these individuals be trained to work with ADs as well? Are all members of the support network receptive to working with an AD?	Is everyone following the rules regarding the AD? Who needs extra training? Is there anyone new who needs to be trained?
Environmental	What is the handler's relationship with their environment? What obstacles will hinder the integration of the dog into the handler's environment? Is the handler's environment constant or changing?	Which environments are more difficult for the handler to use the AD? How are other people in the handler's environment reacting to the dog?
Personal	How will the handler's medical condition impact their ability to work with their dog? How much does the handler want the dog? Why does the handler want the dog? Has the handler ever lived with a dog before? How much experience does the handler have with ADs? Where does the AD go if the handler is unable to care for the dog for a short or long period of time? What are other welfare implications for the AD because of the handler's disability? (rage or dissociation etc.)	Has the handler's medical condition or disability status changed? When challenges arise, how do they impact the handler's determination to work with their dog? Have any welfare implications arisen?

566

### 567 **Strengths, limitations and suggestions for future research**

568        This article explored handlers' expectations and experiences starting before they received  
 569 their dog and continuing for one year after acquisition. The strengths included consideration for  
 570 other people's perspectives, which increased the holistic understanding and reliability of the  
 571 handlers' reported experiences. This article was limited by the long-term commitment required  
 572 from the participants and lower than expected recruitment from AD organizations, who often did  
 573 not know when a handler would receive their AD until right before placement. Both of these  
 574 limitations resulted in a small sample size. Nonetheless, the depth of data that we were able to  
 575 collect for each participant is instructive.

576        Future research should explore these four contextual factors (i.e. societal, social support,  
 577 environmental, personal) with a broader demographic of AD handlers to determine whether our  
 578 results are generalisable to the wider population of AD handlers. Additionally, AD organizations  
 579 should consider these contextual factors when matching and placing ADs. Developing this  
 580 understanding has potential implications for AD organizations to improve services and  
 581 interactions with clients, their support network, environment and society. This could include  
 582 personalizing the training offered before receiving their AD, the support provided during the  
 583 placement period, and continuing connections with the handler after the initial placement period.

### 584 **Conclusion**

585        The aim in this article was to investigate first-time handler's lived experiences working  
 586 with an AD over time. This revealed four contextual factors (i.e., societal, social support,  
 587 environmental and personal) that influenced handlers' experiences working with an AD, which  
 588 have been shown to affect the experiences of disability in other studies (Frier et al., 2018).  
 589 Additionally, these factors led to both benefits and challenges, which could facilitate and hinder

590 the handler's ability to successfully work with their AD. Therefore, these factors are important  
591 for AD organizations to understand and monitor prior to and throughout the process of acquiring  
592 and working with an AD.

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596 **Declaration of Conflicting Interests**

597 The authors declare that there is no conflict of interest.



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## 7.2 Summary

The aim in this chapter was to understand how various contextual factors influence a handler's ability to work with an AD. The collective analysis of the case studies demonstrated that societal, social support, environmental and personal contextual factors were prominent and expected to be prevalent throughout the handler's experience working with their AD. However, these factors were not constant, but continually evolved during the lead up to receiving the dog and throughout the working life with the AD. This evolution was critical to understand as many of these factors were out of the handler's control and could significantly contribute to the outcomes experienced.

The influence of these contextual factors is essential for AD organizations and prospective recipients to understand as it could influence how an AD could assist a person to live their best life. AD organizations and prospective recipients should consider these contextual factors prior to acquiring an AD. The next chapter integrates these findings into a comprehensive understanding of *how* ADs assist a person to live their best life, considering the benefits, challenges and outside influences.



## CHAPTER 8: Discussion

The prevalence and types of ADs are expanding. Within the case studies presented here, the types of ADs included both well-established types, such as guide dogs, and newly formed types, such as medical alert dogs. Although the research base for the former is well supported, the newer types of ADs are underrepresented in research. In general, a greater holistic understanding of the implications of AD provision was needed. Therefore, this thesis aimed to increase understanding surrounding an AD's ability to assist a person to live their best possible life. This was accomplished by first determining that handlers perceived that their dog assisted them to thrive, according to the TTR theory (Chapter 3). As described previously, this theory's application was limited, so case studies were used to understand this phenomenon further. Although it cannot be determined quantitatively how much the ADs assisted their handler to live their best possible life, the in-depth nature of the case studies (presented in Chapters 4-7) demonstrated that each handler and their family felt that the handler was doing better in life and that the AD was enabling the handler to reach their best possible life more compared to before they received their AD or from other forms of assistive technology. The case studies assisted in understanding the benefits and challenges first-time handlers had acquiring an AD. Prior to this collection of studies, the general benefits that prominent AD types provided were well represented in the literature (Sachs-Ericsson, Hansen, & Fitzgerald, 2002) and these were corroborated by my case study participant reports; however, the understanding of challenges was lacking. The purpose of this final chapter is to integrate the findings from the previous chapters into a cohesive understanding of *how* ADs assist their handlers to live their best lives.

This thesis demonstrates that there are three main ways ADs provide benefits to their handler, including through their trained ability (Section 6.1), the relationship developed (Section 5.1) and the presence of the dog (Section 2.1). These factors are not distinct categories but positively influence one another. They enable any handler to increase their ability to live their best possible life. This understanding is especially important as most of these benefits are currently unable to be acquired through other forms of assistive technology, thus heightening an AD's value. The phenomenological approach, however, demonstrated that many background factors contributed to the handler's perception of whether and how they received benefits from their AD. These considerations are discussed next. This thesis then concludes by considering the real-life implications and limitations of the research conducted and outlining future directions for continual improvement of best practice for AD organizations.

## **8.1 Background factors**

Within this study, background factors influenced whether and how a handler responded to the benefits that their AD provided. These considerations included contextual factors, dog experience, expectations, and individuals' prior knowledge, beliefs and attitudes. Each factor is essential to understand independently and simultaneously as they are primarily outside of the handler's control, yet they have a great influence on each other and the perceived outcome of working with an AD.

### ***8.1.1 Influence of contextual factors***

Contextual factors were divided into societal, social, environmental and personal factors, as described in detail for this context in Chapter 7. These factors have previously been found to collectively contribute to society's perception of people with disabilities (Watson, 2012), and among my participants, they had a profound influence on handlers' experiences working with an AD. These factors are

important to consider before a handler receives an AD and over the longer-term as they can change after acquisition. Therefore, these contextual factors could greatly influence the handler's life with their AD and, consequently, the benefits that the handler receives.

Constructively, these factors can facilitate positive experiences for the handler, ultimately enabling them to receive the benefits provided by their AD and live their best life. For example, handlers with a supportive network that assisted the integration of the dog into their daily lives, received benefits from the AD because of the positive social support provided. Similarly, handlers who lived in a supportive society were more likely to experience benefits that their AD provided when out in the community than if they had negative experiences in society. When the contextual factors act positively toward the handler, they could obtain the benefits that the dog provides.

However, when the contextual factors act negatively, they prevent the handler from receiving the benefits that their dog could provide. For example, among my participants, if the social support network did not know how or was hesitant to work with the AD, then the handler and dog were hindered from working together effectively, or at all. This negative interaction could prevent the handler from acquiring the benefits that the AD could provide. The contextual factors, especially within society, contributed so negatively to one handler and his family that they became overwhelmed and were unable to receive many of the benefits that the AD could provide. This family consequently returned the AD.

Given that the influence of contextual factors either support or hinder the acquisition of benefits provided by an AD, care should be taken to ensure that the contextual factors in a prospective recipient's life will enhance rather than detract

from the acquisition of benefits that an AD provides. If consideration for these factors does not occur before receiving an AD, the handler may experience challenges that could have been minimized or prevented.

### ***8.1.2 Influence of dog experience***

The experience and understanding these handlers had with dogs and ADs specifically also influenced the ease of integrating the AD into their life and the immediate benefits that they received. For example, handlers who were not used to caring for a dog found the associated responsibility challenging to maintain, rather than perceiving it as a benefit. The different experiences between handlers with and without dog experience was briefly described in Section 5.3.

Additionally, the entire support network's experience with and understanding of ADs facilitated or hindered the placement process and subsequent benefits the handler received. Individuals without dog or AD experience hindered the handler's ability to acquire benefits by physically preventing them from being together (e.g., having to leave the dog at home when attending a day program), or not knowing how to work with them together (e.g., removing the handler's responsibility for the AD by providing basic care for the dog themselves). These individuals may have been well-intentioned, but ultimately hindered the handler's ability to acquire the benefits that the AD could provide.

Therefore, the experiences AD organizations provided to handlers prior to working with an AD formed a necessary foundation of knowledge and abilities that should assist first-time handlers to work with their dog to the best of their ability. However, this research demonstrated that this knowledge and training should be comprehensive, including the handler's support network as well as the handler. This

would minimize the challenges caused by their lack of knowledge and would ultimately increase the handler's ability to acquire benefits provided by the AD.

### ***8.1.3 Influence of expectations***

A prospective recipient's expectations for their AD can originate from various sources of information (i.e., contextual factors, dog experience and prior knowledge) and play an essential role in how individuals perceive the world (de Lange, Heilbron, & Kok, 2018), or the benefits provided by their AD. The expectations participants had before receiving an AD were extensively discussed in Chapter 4 and appeared to affect the participant's perceptions of working with the AD. Expectations are known to substantially influence observed behavior or outcomes (Sanfey, 2009).

The experiences and understanding that handlers and their support network have before acquiring an AD may significantly contribute to the ease of integrating the AD into the handler's life and consequently the benefits that they receive. Prior experiences with dogs are meaningful as they form a comparison base to evaluate their AD. Since some expectations were accurate, while others were inaccurate, this discrepancy can be disjuncting. For example, having positive expectations for their dog, yet experiencing challenges upon receiving the AD, can hinder the handler's ability to acquire benefits. Therefore, the handler's expectations are important to understand as they could impact the handler's judgments of the services provided and the trustworthiness of the AD organization.

### ***8.1.4 Influence of prior knowledge, beliefs and attitudes***

A handler's prior knowledge, beliefs and attitudes regarding the AD also impact whether the benefits the AD can provide are experienced. Prior knowledge is acquired over a lifetime of experiences as humans naturally try to make sense of their



current situation based on previous experiences (Schkade & Kilbourne, 1991). This has a profound impact on the way an individual perceives the world (de Lange et al., 2018). Additionally, attitudes are an individual's general evaluation of other people, animals, the self, places, objects and issues (Petty & Brinol, 2010) and are assumed to influence beliefs and behaviors (Petty & Brinol, 2010). Within the AD context, an interdependency existed between these factors, all of which impacted the previously discussed background factors.

It is possible that handlers with a negative attitude, belief or inaccurate prior knowledge, will not be able to acquire the benefits their dog could provide. For example, if a handler was having a bad day, they may not perceive the companionship benefits that their dog could provide because of their negative attitude. Similarly, a handler who had strong beliefs about their dog or unrealistic knowledge about benefits an AD can provide, could ignore some benefits that their dog was providing because they expected something more extravagant. Overall, prior knowledge, beliefs and attitudes are all necessary background factors to consider as they potentially influence a handler's ability to acquire the benefits that an AD could provide.

Collectively, background factors have the potential to influence whether a handler experiences the benefits their AD could provide. These factors are essential to consider prior to and throughout the acquisition of an AD, as they influence each other. For example, other studies have demonstrated that an individual's current or previous experiences with dogs, as a child or an adult, could affect their attitude towards dogs, where positive experiences are associated with a positive attitude (Daly & Morton, 2006; Ellingsen, Zanella, Bjerkås, & Indrebø, 2010; Paul & Serpell, 1993; Taylor & Signal, 2005). Additionally, in other research areas, it is known that expectations, motivations and attitudes influence each other and the outcomes people

experience (Wong, Cheung, & Wan, 2013). Therefore, these background factors should be considered collectively.

Often, positive expectations and positive beliefs resulted in these handlers having a positive attitude toward the outcome, even when challenges arose. Additionally, prior knowledge about benefits that ADs provide contributed to handlers believing they would experience the same outcomes. This belief remained even after challenges occurred. Therefore, a handler's perception appeared to be an important factor in the benefits that they experienced.

## **8.2 Influences of perception**

It is essential that handlers understand how the experiences they have with their AD affect the benefits they receive. The link between experiences and benefits appear to rely on the handler's perception of the dog and the background factors. The background factors potentially influence conscious and unconscious perception (Marcel, 1983) that handlers have of their AD. This affiliation is vital to understand as many of the benefits that ADs provide are not directly related to the AD's trained ability, but rather from the perception of their relationship or the dog's presence.

Perception is known to be influenced by awareness of events or actions that happen and expectations regarding what should occur (Jim & Chen, 2006; Kuhl, 2000; Malani & Houser, 2008). The outcomes experienced are ultimately impacted by these perceptions. This is important because individuals with more dog experience have demonstrated more accurate perceptions of dog behavior than those with less experience (Tami & Gallagher, 2009; Wan, Bolger, & Champagne, 2012). This link between experience and perception reveals that handlers' level of experience may influence their perception of the dog's behavior and ultimately, their conscious

perception of the benefits that the dog provides or not. One handler and their family, for example, had no experience with dogs prior to acquiring an AD. Their experiences trying to learn dog body language and behavior during the transition period were difficult and negatively contributed to their perceived ease of working with the AD, hindering the value of the benefits they perceived the dog provided.

Therefore, perception could potentially and seriously influence the outcomes a handler receives. Positive perception towards ADs was prominent for all participants throughout all presented studies, but in some cases, their positive perceptions may have decreased with the experience of challenges or negative background factors. The strength of positive perceptions, however, potentially led handlers to experience benefits that were not actually present. These phantom benefits could be due to the confirmation bias or the placebo effect.

### ***8.2.1 Confirmation bias***

Confirmation bias occurs when an individual seeks or interprets evidence in a way that aligns with existing beliefs or expectations (Nickerson, 1998). Within the context of this thesis, confirmation bias was identified when individuals interpreted certain behaviors their dog performed as a benefit, due to prior knowledge that other individuals have reported to receive the same benefits (Leonard, 2017). The confirmation bias revealed the substantial influence that perception had on the benefits handlers received.

The prevalence of the confirmation bias may be due to the information participants received prior to obtaining their AD. During the application process, for example, AD organizations often provided information to prospective recipients regarding how an AD would change their life before they made their decision to

apply. As would be expected, AD organizations prominently discussed the benefits, which could become internalized during the wait to receive their AD and lead to feelings of heightened commitment to report the benefits that they had been informed about initially. This idea has been supported previously (Jonas, Schulz-Hardt, Frey, & Thelen, 2001), and may have had an extreme influence on reported outcomes (Nickerson, 1998). This was important to consider as information learned earlier (before receiving their AD) has been shown to have a stronger impact on the confirmation bias than information presented simultaneously (when handlers received their AD, Jonas et al., 2001). This time difference was especially relevant to handlers because they often applied to receive an AD, years before they received the benefits.

A review of ADs by Leonard (2017) postulated that individuals, especially parents, may be aware of the supposed benefits of receiving an AD, potentially contributing to them experiencing and reporting certain benefits, revealing a confirmation bias. Within the presented case studies, there was support for this idea as well. The most prominent example reported, was parents who expected their child to increase their responsibility from having an AD, which was later reported to be experienced. Through personal observation and further discussion, some handlers' responsibility did not appear to increase as much as reported. Although these handlers gained some responsibility in feeding and toileting the dog, they often had to be reminded, or the tasks were performed by members of their family or carers, even when the handler was physically capable. Therefore, the confirmation bias appeared to have influenced their perception that the handler increased their responsibility.

Expectations collected before receiving an AD assisted in identifying these instances of confirmation bias. Understanding participants' expectations cannot reduce the probability of participants reporting confirmation bias. Rather it

demonstrated that participants were reporting unmotivated confirmation bias, meaning that they were not motivated to defend beliefs that others had shared with them (Nickerson, 1998), but they genuinely believed the reported benefits.

### ***8.2.2 Placebo effect***

Another potential perceptual influence regarding how an individual perceives an AD to assist a handler in living their best life is the placebo effect. The placebo effect is defined as “a (positive) change in health outcomes due to a (positive) change in beliefs about the value of a treatment” which may be behavioral or physiological (Malani & Houser, 2008, p. 311). Within this context, the AD was the treatment. The placebo effect was possible because participants demonstrated a positive belief about the value of an AD through confirmation bias and perceived health benefits.

Current research supporting the placebo effect proposes two main underlying theories. Expectancy theory states that a placebo effect is mediated by explicit or consciously accessible expectations, while classical conditioning states that the placebo effect is a conditioned response (Stewart-Williams & Podd, 2004). Since expectations are an important component of the placebo effect (Hicks, Hanes, & Wahbeh, 2016), shape individuals’ interpretations of the world in response to stimuli (Sanfey, 2009) and were prominent in this thesis, expectancy theory was more relevant in this context. Conditioned responses may be relevant after handlers have worked with their AD for longer. A placebo effect may occur when sensory input is ambiguous or difficult for the brain to interpret and subsequently interprets it in line with the expectation (de Lange et al., 2018). Therefore, positive expectations could lead to positive outcomes, even without definitive proof of the outcome occurring.



The placebo effect has been proposed to arise within animal assisted intervention studies (Crouse, 2014; McLaughlin, 2013), and this thesis supports the placebo effect within AD studies as well. Case study 4 clearly demonstrated the placebo effect. Prior to receiving an AD, H4 was on high doses of sedatives to assist him in sleeping at night. The medication was required because H4 was afraid of dying if his medical condition occurred during the night, and as such, he would not allow himself to sleep. Before receiving the AD, P4 and H4 reported expecting the trained alert and presence of the dog to make H4 more comfortable sleeping and potentially reduce the amount of sedative medication required.

One month after acquiring and living with his AD, the dog was not yet trained to alert to his medical condition and therefore could not alert someone to the presence of his condition when he was sleeping. Despite this, when asked what the main benefits were that he was experiencing, H4's immediate response was: "I tend to sleep better." Consequently, his mother decided to reduce the amount of sedatives that he was taking. His mother explained this decision as: "some [of] his medications have actually been able to be reduced since [the dog] came in. His sedatives, to make him sleep. It doesn't eliminate it, but once she is taught to alert, who knows?" This showed that P4 understands the dog is not trained to alert, yet they have experienced these benefits. Later during the same interview, H4 was asked "how confident are you that she will alert?" and H4 confidently responded: "I mean now, not at all because she isn't trained, but I would be pretty confident once she's trained." This demonstrated that H4 also understood that the AD was unable to alert to his medical condition. Consequently, the reported behavioral benefits seem unfounded.

Behaviorally this case study appeared to demonstrate a placebo effect, but physiologically, this was undetermined. A portion of physiological data collected, but

not discussed (see Appendix E), is relevant here. Physiological data regarding sleep patterns was conducted for one week with participants before and six months after they received their dog. These data demonstrated that H4 was not physiologically experiencing better sleep after acquiring the AD compared to before. For example, each night that data were recorded before H4 received his AD, he slept throughout the night without waking. After receiving the dog, H4 woke up at 2:30 and 4:30 am on two different nights and did not sleep again until having a nap later those days. Although these data were limited due to the few nights he remembered to turn on the sleep tracking mode, the physiological data collected did not match the behavioral data reported after receiving the AD.

The lack of physiological data does not discount the perceived behavioral effects experienced. Potentially H4's expectations were so acute and desired, that they were perceived regardless of actual sleep patterns. This perception demonstrates a component of the placebo effect called the expectancy effect, where positive beliefs about outcomes can improve the outcome itself (Hicks et al., 2016). It was not the AD organization's intention to generate benefits for their clients via the placebo effect; however, as CS4 demonstrated, this may have occurred. While there were questions I wished to ask, to understand their reasoning further, I did not feel it was appropriate as I was aware of the potential negative ramifications that I could cause by putting a seed of doubt in his mind.

Both the confirmation bias and placebo effect appeared to contribute to the benefits that participants reported. Additionally, this analysis demonstrated that numerous factors influenced handlers' experiences and perceptions of living and working with an AD. These factors ultimately contributed to perceptions of the benefits that handlers experienced. Since these factors and perceptions are fluid and

longitudinal, meaning that they can change, influence each other and accumulate over time, this poses many implications for AD organizations to consider.

### **8.3 Real-life implications**

This research has many real-life implications for prospective recipients, their support network, AD organizations and the ADs themselves. The overarching implication from this thesis centers around the prevalence of benefits and challenges that handlers experienced and the background factors' influence on their perception of the benefits received from their AD. This led to five notable implications.

First, handlers need to realize the prevalence of challenges that they could and probably will experience when integrating an AD into their lives. Some challenges will be due to factors outside of their control, which could be frustrating and negatively influence their experiences. These challenges could also extend the time it takes to integrate an AD into their life successfully. Anticipating these challenges could enhance the perception of benefits a first-time handler receives from their AD.

Second, all members of a handler's support network need to have a shared understanding and willingness to support the handler with the AD. This understanding and desire are essential as the support network needs to realize that the AD will not necessarily relieve them of the support that they need to provide the handler. Instead, they may need to provide more support, especially in the beginning, to assist the handler to work with the AD effectively. Additionally, it is evident that the support network needs to be educated more thoroughly on how to work with the AD.

Third, AD organizations need to recognize their influence on a handler's knowledge and expectations before receiving an AD. These factors are vital to understand as handlers and families vary in their understanding of dog behavior and

tolerance for perceived behavior problems, which are common reasons for returning an AD (Burrows, Adams, & Millman, 2008). Since ADs do not perform like robots or other forms of assistive technology, that performs consistently irrespective of environment or condition, participants' expectations of these factors are important. The emphasis of dogs' natural variability and behaviors to first-time clients may be especially important as normal dog behavior could be perceived as a behavior problem due to unrealistic expectations. Thus, AD organizations need to consider a potential handler's background factors when placing an AD and work to assist clients in developing realistic expectations before acquiring their dog.

Fourth, AD organizations need to recognize that the challenges handlers experience could potentially lead to welfare concerns for the AD. Handlers with intellectual disabilities, especially severe comorbid conditions or immature individuals, may require extra assistance to maintain the welfare of the AD. Consideration for the willingness and capability of the support network to assist is needed prior to placing an AD. If other individuals are unable to support the handler, other options should be considered to reduce welfare implications for the AD. As the paper presented in Chapter 3 discussed, ensuring the most appropriate intervention or type of dog (which may not be an AD) is used to assist an individual is imperative. Obtaining a CD is one option that could provide benefits through the handler-dog relationship and the dog's presence. Other options include participating in animal-assisted activities/therapies/interventions, frequent visits from a therapy dog, or potentially a robot dog. These options may be viable as welfare implications would be minimized because the dog would be handled by a professional. The individual could still receive many of the benefits that an AD would provide, while potentially

minimizing the anticipated challenges. Irrespective of the intervention chosen, all considerations need to be handler specific.

Fifth, this thesis demonstrated the importance of AD organizations understanding their commitment to the client before promising or placing an AD. Organizations should ensure they have the capability to assist the handler in integrating the dog into every aspect of their life, irrespective of the potential time commitment. This consideration includes training all people who will be involved with the handler and dog on how to properly work with the new team.

Overall, this thesis demonstrates the importance of using a client-centered approach to prepare and facilitate positive experiences for first-time AD handlers. This includes consideration for the handler's background factors and their social support network's knowledge and willingness to work with an AD. These implications are essential as they could facilitate best practice initiatives.

#### **8.4 Limitations to the study**

While the results presented in this thesis contributed new knowledge to the field, there were some limitations. Specific limitations for each study were presented in the respective papers. Generally, the practicality and feasibility of the studies limited the thesis. This limitation included the number of participants and the time frame of the studies. Although the low number of participants allowed for more time with each participant, the distance they lived from me (some in other states) and the duration of my candidature, limited the time I was able to spend with participants. The information presented from the participants was limited to interview data only as the other data that were obtained did not contribute anything novel and therefore, were removed or altered to streamline participation, as described in Appendix A.



Finally, the inability to recruit a comprehensive sample of AD types generally limited this thesis. Based on the overlap of benefits and challenges handlers and their families experienced between types of AD within the literature, many of the outcomes presented may be generalizable to the established AD types; currently, however, this is undetermined. The results presented here cannot be generalized to other types of dogs who provide support to an individual, such as working dogs or emotional support animals.

### **8.5 Future directions**

This thesis opens many avenues for further research. The background factors and overall challenges AD handlers faced, need exploration in greater depth. More longitudinal research would also enhance understanding of the handler's experiences with ADs as many of the challenges appeared to minimize with time. Developing this understanding further would enable AD organizations to ensure clients have realistic expectations, create more comprehensive education programs and have better overall experiences after AD acquisition.

This thesis also demonstrated the importance of a responsive support network in facilitating benefits and minimizing the challenges. Future research should include careful consideration for a handler's support network on acquiring and learning to work with the AD, including their impact on the handler-dog relationship. This network is particularly important to understand for handlers with intellectual disabilities or who are young and may have an increased dependence on their support network.

The studies presented here will hopefully motivate the broader HAI community and human-dog relationship researchers to conduct additional research in

this area with more substantial and more representative samples of participants. As the generalizability of the benefits and challenges across AD types are unknown and the types of ADs are expanding, developing this understanding will assist AD organizations in preparing the handler's expectations for their specific type of AD. For example, the newer types of ADs commonly involve psychological challenges or alerting to medical events. The cognitive abilities of handlers with these types of disabilities could be very different from the traditional AD handlers whose disabilities are often more physical than cognitive. The difference in cognitive ability between handlers could greatly affect the benefits and challenges perceived and should be considered in future studies.

Finally, researchers should understand that the thriving construct had some commendable qualities regarding the understanding of human-AD relationships. However, thriving may not be the best construct to understand how ADs increase a person's ability to live their best life. Other constructs should be applied and experimentally tested in the future.

## **8.6 Conclusion**

To conclude, ADs assist their handler to live their best possible life by providing substantial benefits. These benefits arise from the AD's presence, relationship with the handler, and trained abilities. This thesis clearly demonstrated, however, that handlers did not automatically receive these benefits from the acquisition of an AD. Rather, there were many factors that influenced how and whether handlers were able to acquire the benefits that their ADs were providing. These factors need to be considered in all aspects of the handler's life prior to and throughout the implementation of the AD to minimize challenges and enable handlers to receive as many benefits as their AD can provide.

## **Epilogue**

The participants in this thesis were invaluable and their experiences with their ADs did not stop after data collection finished. This section provides an update on the handlers' lives since they completed the official study. The aim is to provide closure regarding each handler's experiences with their AD since their final interview.

H1 and his seizure alert dog are still attending all the community programs that he was attending during the study. He has also happily added a few new programs due to his recent receipt of government funding for disability support, which he did not have access to prior. Adding these new programs has been successful due to the dog's influence in reducing anxiety around seizures and disability in general. H1's AD has given him a new zest for life.

H2 has experienced continual challenges with his psychosocial AD at the group home and the day programs. One of the day programs complained about the AD's behavior to the AD organization, so the organization took the dog for two weeks to update the dog's training. When the dog returned to the day program with H2, another member of that community started self-harming in fear of the dog. Therefore, the dog is now only allowed to attend one day per week.

H3 has had a generally positive experience with her mobility AD, who has become a vital part of her life and has relieved her depression. However, she reported that her dog experienced major medical challenges for a couple of weeks and was close to being retired due to an undetermined anemic medical condition. During this time, her dog could not provide many of the benefits she enjoyed. Her AD has since recovered, and her presence helped H3 and her family through her father's passing.

H4 has been bringing his medical alert AD to school with him for one hour a day, three days a week with intention to increase it to full time. Although the AD is still not officially trained to alert to H4's medical condition, she is public access certified and appears to recognize days when he is not feeling well. The organization considers this ability to be the beginning steps to learn to alert, which the AD will be taught soon. In general, H4's AD has assisted him to feel much happier and have a positive outlook on life.

H5 is doing well with his guide dog. He reports that his relationship with his AD is strong, but they still have good days and bad days, which he perceives that any relationship is expected to have. H5 is in the process of looking for a place of his own to live, but in general, he believes that life is going very well, and he cannot imagine life without his AD.

H6 has been experiencing cognitive decline, which has caused extra challenges for the continuation of training with her medical alert AD. Additionally, she is still experiencing extended hospital admissions, where her dog is not able to stay with her. However, when H6 is at home, she has been able to do things that she never thought possible, such as attending appointments alone. She is receiving ongoing support from the AD organization, which has been beneficial.

H7 is doing well; however, she is still finding the responsibility of having a guide dog difficult. She recently went to a camp for a week without her AD and enjoyed the freedom it brought her. Although she enjoyed the mobility and companionship that her AD brings, she is still determining whether an AD is right for her. The lack of additional requirements needed to use a cane is desirable compared to the constant responsibility of caring for her AD.

I have not been able to contact H8 or his family for an update since they decided to return the mobility AD.

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## **Appendices**

### **Appendix A: Methods conducted but not reported**

The case studies initially requested each handler to participate in four “tasks” along with the interviews. These tasks involved describing five expectations for their AD using the SMART principles (specific, measurable, achievable, realistic/relevant and timed; Bovend'Eerd, Botell, & Wade, 2009), being video recorded for behavioral observations, taking pictures of things that represent “living with my disability” in a photovoice task (Jurkowski, 2008), and responding to questionnaires at randomly prompted times throughout the day using experience sampling procedures (Larson & Csikszentmihalyi, 1983; Meschtscherjakov, Weiss, & Scherndl, 2009). The goal of these tasks was to gain greater insight into the daily experiences of the handlers and to validate interview data through other means. These tasks were conducted at two time periods throughout the study, primarily before they received their AD and six months after they received their AD as seen in Table 3.

Table 3  
*Timeline of data collection for participant with disability*

<u>Time</u>	<u>Data collected</u>
Approximately one month before acquiring an AD	<ol style="list-style-type: none"> <li>1. Interview with handler to document case history and elicit expectations re AD</li> <li>2. Experience sampling (ES) and activity data for one week</li> <li>3. Photovoice data capture</li> <li>4. Behavioral observation of nominated daily activity</li> <li>5. Interviews with significant others to document functional status of participant</li> <li>6. Interviews with AD instructor regarding formation of relationship between handler and dog</li> </ol>
One month after acquiring an AD	<ol style="list-style-type: none"> <li>1. Interview with handler re initial experiences with dog and how these relate to expectations</li> </ol>
Six months after acquiring an AD	<ol style="list-style-type: none"> <li>1. Interview with participant re ongoing experiences with dog and how these relate to expectations</li> <li>2. Capture of ES and activity data for one week</li> <li>3. Photovoice data capture</li> <li>4. Behavioral observation of nominated daily activity</li> <li>5. Interviews with significant others to document functional status of participant</li> <li>6. Interviews with AD instructor regarding formation of relationship between handler and dog</li> </ol>
Twelve months after acquiring an AD	<ol style="list-style-type: none"> <li>1. Interview with participant re ongoing experiences with dog and how these relate to expectations</li> <li>2. Re-presentation and discussion of data from photovoice</li> </ol>

Due to variations in participants' abilities and disabilities, the number of tasks each handler participated in varied. Table 4 describes amendments made for each handler on each task. During the analysis phase, it became apparent that the information gleaned from the case study tasks supported the interview data but did not provide any additional information – rather, the tasks were an unnecessary burden on participants (e.g. experience sampling was especially challenging and was often hindered by other factors in their lives, such as the effects of certain medications). Therefore, the case study tasks were not reported.

Table 4

*Amendments made to the case study tasks for each case study (CS)*

CS	Interviews	Expectations	Behavior observations	Photovoice	Experience Sampling	Other notes
1	Participated in two Time 1 interviews. He experienced a seizure during the first so the interview was stopped.	No changes	No changes	No changes	No changes	Mother present during all interactions
2	Participated in two Time 1 interviews. During the first, he did not know he was receiving an AD (to minimize his anxiety), the second time he knew he would be getting an AD.	No changes	No changes	Did not complete, deemed too difficult by his mother	Time 1: did not wear the personal fitness tracker and his mother responded for him.  Time 2: deemed too challenging as mother was not around as much and did not complete.	Mother present during all interactions
3	Unable to interview the nominated individual (carer)	No changes	No changes	No changes	Did not use the personal fitness tracker to record steps or heart rate due to disability limitations	
4	Unable to complete Time 4 within university time allotment	No changes	No changes	Mother took pictures instead of handler	Wore own personal fitness tracker during Time 3	Mother was present for all interactions
5	Initial interview was during a camp for future adolescent guide dog users	Unable to do at Time 1, did not do at Time 3	Unable to do at Time 1, did not do at Time 3	Unable to do at Time 1, did not do at Time 3	Unable to do at Time 1, did not do at Time 3	P5 was in the training process when recruited for the case study.



6	Had mother complete Time 4 interview as the handler was sick in hospital	Did not complete Time 3	Not comfortable taking a video at Time 1, did not complete Time 3	Uncomfortable with taking photos, did not complete at Time 3	Time 1: did not wear personal fitness tracker Time 3: did not complete	Hospitalizations affected much of the data collection
7	No changes	No changes	No changes	Needed assistance with taking pictures due to vision impairment, also submitted videos	Responded verbally to the questions over the phone instead of online due to vision impairment. Needed assistance obtaining steps and heart rate.	
8	Only mother present during the Time 1 interview as her son did not yet know he would be receiving an AD.	Did not complete Time 3	Unable to do at Time 1, did not complete Time 3	Unable to do at Time 1, did not complete Time 3	Time 1: the mother completed the questions on behalf of the son Time 3: did not complete	Never met the son, only mother present during Time 1 and 2. They returned the dog so did not complete Time 3 or 4.

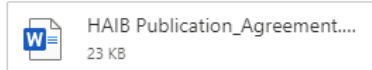
## Appendix B: Letter of acceptance from Human Animal Interaction Bulletin



Coy, Anthony <coya@sar.usf.edu>

Tue 8/6/2019 4:28 AM

JENNIFER GRAVROK ✓



Dr. Gravrok,

**Congratulations** on the acceptance of your manuscript to the Special Issue of the Human-Animal Interaction Bulletin. At this point, I would like to ask that you carefully review your paper to ensure it conforms to APA format. In particular, please be sure to double check that all citations are referenced and all references are cited in the text. You should receive page proofs within a month of returning as this will be the version that we format for publication.

In addition, please complete and return the attached publication agreement.

Please return both documents via email by 8/19/19.

Sincerely,

Anthony Coy and Chris Holden  
Guest Editors, Special Issue of HAIB

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## Appendix C: Thriving Through Relationships with Dogs Survey

Thriving Through Relationships with Dogs Survey (TTRDS)					
<b>Section 1: General questions about your dog</b> If you live with more than one dog, please complete the survey about the dog to whom you feel most bonded.					
For how many years has your dog lived with you?	OPEN RESPONSE				
What breed is your dog? If your dog is mixed breed, state the breed he or she most resembles	OPEN RESPONSE				
Is your dog a certified assistance dog? A certified assistance dog is specifically trained to assist or alleviate the effect of a physical, psychological or intellectual disability and has public access rights.	Yes (answer next question, skip following) No (skip next question, answer following)				
What type of assistance dog is it?	Mobility assistance dog Guide dog for a vision impairment Diabetes alert dog Seizure alert dog Hearing dog for a hearing impairment Psychiatric assistance dog Autism assistance dog Other (please write) (OPEN RESPONSE)				
What is your main reason for having a dog? Please select only one answer	Companionship social support decrease my anxiety decrease my depression feeling of safety Guarding Exercise Sport/Hunting Help manage my disability Other (please write) (OPEN RESPONSE)				
<b>Section 2: Human-Dog Relationship</b>					
Do you consider yourself to be the primary caregiver for your dog?	Yes	No			
Please respond to each of the following questions on a scale from never to always. Please be open and honest in your responses.					
How often do you consider your dog to be there for you when you are in need?	Never	Rarely	Sometimes	Often	Always
How often do you feel you can share your joys and sorrows with your dog?	Never	Rarely	Sometimes	Often	Always

Please respond to each of the following questions on a scale from not at all to extremely. Please be open and honest in your responses.							
To what degree do you trust your dog?	Not at all	Slightly	Somewhat	Moderately	Extremely		
To what degree do you believe your dog helps you to thrive? Thriving is defined as having the ability to grow and flourish, especially in the face of adversity.	Not at all	Slightly	Somewhat	Moderately	Extremely		
To what extent do you believe your life overlaps with your dog's life?	Not at all	Slightly	Somewhat	Moderately	Extremely		
Section 3: Thriving through relationships theory of social support							
How strongly do you agree with the following statements? Please be open and honest in your responses							
	How strongly do you agree with the following statements?						
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Some-what	Neither agree nor disagree	Agree Some-what	Agree	Strongly agree
My dog has helped me develop social skills. [SOS-1]							
My dog has helped me discover new abilities. [RC-1]							
My dog has helped me learn about my positive qualities. [RC-2]							
My dog has helped me learn about other people. [SOS-3]							
My dog has helped me to feel less stressed in new situations. [RC-4]							
My dog has helped me develop intimate relationships with others. [SOS-8]							
My dog has helped me to not to dwell on negative circumstances. [SOS-9]							
My dog has helped me increase my mental stimulation. [RC-10]							
My dog has helped me to increase my self-esteem. [SUPPORT]							
My dog has helped me feel less threatened. [SUPPORT]							
	How strongly do you agree with the following statements?						
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Some-what	Neither agree nor disagree	Agree Some-what	Agree	Strongly agree
My dog has helped me develop problem solving skills. [SOS-1]							
My dog has helped me learn about what matters most in life. [SOS-2]							

My dog has helped me learn about my negative qualities. [RC-2]							
My dog has helped me cope with stress. [SOS-4]							
My dog has helped me, after a bad experience, to positively view my social network. [SOS-6]							
My dog has helped me to become more committed to relationships that are important to me. [RC-8]							
My dog has helped me to cope with stress in a healthy way (for example, exercising instead of drinking). [SOS-10]							
My dog has helped me to increase my feelings of confidence. [SUPPORT]							
My dog has helped develop coping strategies. [SUPPORT]							
My dog has helped me to think positively every moment of the day. [EXTREME]							
How strongly do you agree with the following statements?							
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Somewhat	Neither agree nor disagree	Agree Somewhat	Agree	Strongly agree
My dog has helped me strengthen skills I previously had. [RC1]							
My dog has helped me learn about the type of person I want to become. [SOS2]							
My dog has helped me learn about life. [SOS-3]							
My dog has helped me embrace opportunities to engage with others socially. [RC-4]							
My dog has helped me to become more positive and helpful to others. [RC-6]							
My dog has helped me to create stable relationships with people that are important to me. [RC-8]							
My dog has helped me to increase my physical activity. [RC-10]							
My dog has helped me to increase my feelings of empowerment. [SUPPORT]							
My dog has helped me solve problems. [SUPPORT]							

	How strongly do you agree with the following statements?						
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Somewhat	Neither agree nor disagree	Agree Somewhat	Agree	Strongly agree
My dog has increased by sense of self-esteem. [SOS-5]							
My dog has increased my sense of self-efficacy. My belief in my ability to succeed or accomplish a task. [SOS-5]							
My dog has increased my satisfaction with relationships that are important to me. [SOS-8]							
My dog has increased my feelings of personal accomplishment. [RC-9]							
My dog has increased my threshold for stress. [SOS-10]							
My dog has increased my ability to successfully engage with opportunities. [SUPPORT]							
My dog has increased my feelings of hope. [SUPPORT]							
My dog has increased my feelings of optimism. [SUPPORT]							
My dog has increased my feelings of gratitude. [SUPPORT]							
My dog has increased my feelings of security. [SUPPORT]							
	How strongly do you agree with the following statements?						
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Somewhat	Neither agree nor disagree	Agree Somewhat	Agree	Strongly agree
My dog has decreased my feelings of regret. [RC-9]							
My dog has decreased my feelings of fear. [SUPPORT]							
My dog has decreased my feelings of stress. [SUPPORT]							
My dog has decreased my feelings of anxiety. [SUPPORT]							
My dog has decreased my feelings of anger. [SUPPORT]							
My dog has decreased my feelings of depression. [SUPPORT]							
My dog has decreased my feelings of shame. [SUPPORT]							
My dog has decreased my negative views of humanity even after a bad experience. [SOS-6]							



My dog has prevented me from feeling guilty. [SUPPORT]							
My dog has prevented me from feeling like a failure. [SUPPORT]							
	How strongly do you agree with the following statements?						
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Some-what	Neither agree nor disagree	Agree Some-what	Agree	Strongly agree
My dog has taught me about life through shared experiences. [RC-3]							
My dog has encouraged me to be more resilient in stressful situations. [SOS-4]							
My dog has positively influenced my potential. [RC-5]							
My dog has assisted me to reach for meaningful goals. [SOS-7]							
My dog has provided me enthusiasm for living. [RC-7]							
My dog has encouraged me to feel excitement. [SUPPORT]							
My dog is part of my idea of who I am. [SUPPORT]							
My dog depends on me and I depend on my dog. [SUPPORT]							
I feel emotionally close to my dog. [SUPPORT]							
My dog and I have absolutely everything in common. [EXTREME]							
	How strongly do you agree with the following statements?						
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Some-what	Neither agree nor disagree	Agree Some-what	Agree	Strongly agree
My dog has taught me about other people through shared experiences. [RC-3]							
My dog has positively influenced my overall abilities. [RC-5]							
My dog has positively affected my views of others. [RC-6]							
My dog has assisted me to reach my full potential. [SOS-7]							
My dog has encouraged me to feel enthusiasm. [SUPPORT]							
My dog has positively affected my health. [SUPPORT]							
My dog has given me a reason to trust him/her. [SUPPORT]							

My dog believes in my dreams. [EXTREME]							
My dog believes in my abilities. [SUPPORT]							
How strongly do you agree with the following statements?							
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Somewhat	Neither agree nor disagree	Agree Somewhat	Agree	Strongly agree
My dog helps me be true to myself. [RC-7]							
My dog helps me appreciate the good aspects of my life. [SOS-9]							
My dog helps me to be open to new experiences. [SUPPORT]							
My dog helps me to be more curious. [SUPPORT]							
My dog helps me physically respond less negatively to stress. [SUPPORT]							
Section 4: Life Status Variables							
How strongly do you agree with the following statements?	Strongly disagree	Disagree	Disagree Somewhat	Neither agree nor disagree	Agree Somewhat	Agree	Strongly agree
In most ways my life is close to my ideal. [SWL]							
The conditions of my life are excellent. [SWL]							
I am satisfied with my life. [SWL]							
So far I have gotten the important things I want in life. [SWL]							
If I could live my life over, I would change almost nothing. [SWL]							
Compared to normal, life for you at the moment is	Extremely Easy	Moderately Easy	Somewhat Easy	Unchanged	Somewhat Difficult	Moderately Difficult	Extremely Difficult
Section 5: open response question							
What specifically does your dog do to help you thrive? Thriving is defined as having the ability to grow and flourish, especially in the face of adversity.	OPEN RESPONSE						
Section 6: General questions about you							
What is your year of birth?	OPEN RESPONSE						
What gender do you identify with?	Male Female Non-binary/third gender Prefer not to say						
Do you live in Australia?	Yes/No (if no skip next question)						
What is your postcode?	OPEN RESPONSE (skip next question)						
Which country do you live in?	OPEN RESPONSE						
From the list below do you currently have, or had, any of these impairments/disabilities	Mobility impairment Hearing impairment						

since owning your dog? Please select any that apply.	Vision impairment Epilepsy or seizure disorders Diabetes Post-Traumatic Stress Disorder (PTSD) Autism Spectrum Disorder Anxiety Depression Other form of impairment or disability (please write) (OPEN RESPONSE)
Is there anything that you would like to add? (please write)	OPEN RESPONSE

### Key

[SOS-#] indicates this question represents Source of Strength support and indicator #

[RC-#] indicates this question represents Relational Catalyst support and indicator #

[SUPPORT] indicates the general support questions

[EXTREME] indicates this question represents an extreme response

[SWL] Satisfaction With Life scale questions

**Appendix D: Paper 7 – Adapting the traditional guide dog model to enable vision- impaired adolescents to thrive**

Gravrok, J., Howell, T., Bendrups, D., & Bennett, P. (2018). Adapting the traditional guide dog model to enable vision-impaired adolescents to thrive. *Journal of Veterinary Behavior: Clinical Applications and Research*, 24, 19-26.



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## Research

## Adapting the traditional guide dog model to enable vision-impaired adolescents to thrive

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## ABSTRACT

People with vision impairments face physical, psychological, and social challenges, potentially preventing them from thriving—defined as growing and flourishing especially in the face of adversity. Guide dogs relieve some of these challenges for vision-impaired adults. However, due to concerns regarding an adolescent's ability to manage a guide dog, they are typically ineligible as handlers. The purpose of this research was to explore expectations regarding benefits/challenges that adolescents could experience from a guide dog. We interviewed 4 vision-impaired adolescents, their parents, and staff from a guide dog organization. Stakeholders expected that benefits associated with a guide dog's trained abilities, such as improved mobility, safety, and independence, may be difficult to achieve. However, additional expected benefits, including increased confidence, companionship, and social support, are critical to thriving. Hence, we propose employing facilitated support dogs, ameliorating these challenges, while providing thriving benefits at an earlier age and preparing adolescents for later use of a guide dog.

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## Introduction

During adolescence, the second decade of life, profound changes transpire in the physical, psychological, and social domains of young people's development (Lemer et al., 2010). Visually impaired adolescents may experience this developmental period as being particularly demanding, as they confront additional challenges, including limited independence, social stigma, isolation, and discrimination (King et al., 1993; McAlpine and Moore, 1995). For visually impaired adolescents to thrive, defined as growing and flourishing, especially in the face of adversity (Feeney and Collins, 2015), they need appropriate support.

Relevant literature suggests that vision-impaired adolescents experience challenges, which vision-impaired adults can alleviate through the support of a guide dog (Sanders, 2000; Whitmarsh, 2005; Wigggett-Barnard and Steel, 2008). For example, guide dogs are trained to assist mobility by guiding their handler around obstacles (Naderi et al., 2001), thereby directly increasing mobility efficiency

and preventing injury (Whitmarsh, 2005; Wigggett-Barnard & Steel, 2008; Craigon et al., 2017). Adult handlers also report that guide dogs provide additional benefits, such as increased independence, and more social interactions (Whitmarsh, 2005; Wigggett-Barnard and Steel, 2008; Gaunet and Milliet, 2010; Craigon et al., 2017).

Despite these benefits, adolescents are typically excluded from receiving a dog until they are 16 or 18 years of age, depending on the provider organization (Davis et al., 2004; Walther et al., 2017). This is mostly due to concerns surrounding an adolescent's ability to ensure a dog's well-being, as they may have lower levels of maturity, responsibility, and ability to ensure the care and safety of their dog and themselves (Butterly et al., 2013). To our knowledge, only 2 of the 80 members of the International Guide Dog Federation have developed programs to train adolescents to work with guide dogs; these are the MIRA Foundation and British Columbia & Alberta Guide Dogs, both in Canada.

While guide dog organizations have sound reasons for not providing adolescents with a dog, providing service dogs for children with other disabilities are becoming increasingly common. For example, mobility service dogs (Ng et al., 2000), seizure alert dogs (Kirtan et al., 2004), and autism assistance dogs have been provided to children, some from as young as 3 years of age (Burrows, Adams, and Millman, 2008; Burrows, Adams, and Spiers, 2008; Hall et al.,

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2016). Concerns about the dog's welfare and legal responsibilities associated with dog ownership are managed through a parent acting as a "facilitator" in the facilitated service dog model, whereby a parent, child, and dog have a 3-way partnership (Davis et al., 2004; Burrows, Adams, and Millman, 2008). The facilitated model has not been used with guide dogs, perhaps because the mobility benefits provided by a facilitated guide dog would be equivalent to what a parent could provide alone, therefore rendering the dog redundant. In other contexts, the services provided by facilitated service dogs are not usually those that a parent could provide without a dog being present.

Even though a traditional facilitated service dog model may not produce physical mobility benefits when applied to guide dogs, it is possible that the dog could provide other valuable benefits. Adult handlers of all types of service dogs, along with people who observe facilitated service dogs working with children, have reported that social and psychological benefits are sometimes profound (Davis et al., 2004; Kirtton et al., 2004; Burrows, Adams, & Spiers, 2008). Although these benefits are typically not specifically trained for by service dog organizations, they can be just as important and could apply to adolescent guide dog handlers, enabling them to thrive.

To determine if additional organizations should consider training adolescents to work with guide dogs, this research aimed to explore expectations regarding perceived benefits and challenges, as reported by a small number of adolescents with vision impairments, their parents, and staff from a leading guide dog training organization. The goals were to describe: what benefits adolescents with vision impairments are expected to receive from a guide dog; whether substantial barriers to providing this service exist; and whether these barriers might be overcome by adapting a facilitated service dog approach.

The impetus for this project was an invitation to observe a well-established guide dog organization's Children's Mobility Service Team during a 3-day "Guide Dog 101" training camp for 6

adolescents. The goal of the camp was to introduce adolescents with vision impairments to guide dog mobility. The camp involved various activities involving dogs and group discussions involving various topics on guide dog handling and rights and responsibilities. Intermixed, each adolescent also worked one-on-one with guide dog instructor pairs and orientation and mobility instructors. Before the start of the camp, the organization informed all families of children attending the camp about the study. They were invited to contact the researchers to accept our invitation to participate, either before the camp or at its commencement.

## Method

This study was approved by the La Trobe University Human Ethics Committee (HEC 16-092).

## Participants

Six adolescents, aged from 12 to 18 years and with a range of vision impairments, participated in the camp. Four (including 2 from the same family) of the 6 adolescents attending the camp accepted the invitation to participate in the research, also providing consent for us to interview their parents. One of the 4 was blind from birth, 1 had recently lost all vision, and 2 had degenerative vision loss at various stages. All had attended other children's orientation and mobility camps with the organization. All 6 instructors involved in the camp participated; 3 were Orientation and Mobility Instructors who teach travel skills, and 3 were Guide Dog Mobility Instructors who train and place guide dogs. Three other staff members who worked in various areas of the organization also participated in the study. Some participants were interviewed more than once, to ascertain if attendance at the camp resulted in changes in their beliefs or opinions. Table 1 lists the 29 interviews conducted as part of this study.

**Table 1**

A list of the 29 interviews conducted as part of the study, depicting who was interviewed, for how long, and at what stage relevant to the camp

Interview number	Role	Family	Context	Total interview time (min)	Notes
1	Mother and father of potential recipient	A	First interview—precamp	45	Joint in-person interview
2	Potential guide dog recipient 1	A	First interview—precamp	30	Female, 13 years old, mother present during in-person interview
3	Orientation and mobility instructor A	-	First interview—precamp	35	Phone interview
4	Potential guide dog recipient 2	B	First interview—during camp	20	Male, 18 years old, in-person interview
5	Potential guide dog recipient 3	B	First interview—during camp	20	Female, 13 years old, in-person interview
6	Guide dog instructor A	-	First interview—during camp	15	In-person interview
7	Potential guide dog recipient 4	C	First interview—during camp	20	Female, 15 years old, in-person interview
8	Orientation and mobility instructor B	-	First interview—during camp	30	In-person interview
9	Guide dog instructor B	-	First interview—during camp	20	In-person interview
10	Orientation mobility instructor C	-	First interview—during camp	20	In-person interview
11	Guide dog instructor C	-	First interview—during camp	45	In-person interview
12	Other staff member A	-	Only interview—during camp	20	In-person interview
13	Mother of potential recipient	C	First interview—during camp	20	Phone interview
14	Mother and father of potential recipients	B	First interview—during camp	30	Joint phone interview
15	Other staff member B	-	Only interview—during camp	60	In-person interview
16	Other staff member C	-	Only interview—during camp	30	In-person interview
17	Orientation and mobility instructor A	-	Second interview—after camp	35	Phone interview
18	Potential guide dog recipient 1	A	Second interview—after camp	35	Mother present during in-person interview
19	Mother of potential recipient	A	Second interview—after camp	45	In-person interview
20	Guide dog instructor B	-	Second interview—after camp	30	Phone interview
21	Orientation and mobility instructor B	-	Second interview—after camp	27	Phone interview
22	Guide dog instructor C	-	Second interview—after camp	20	Phone interview
23	Guide dog instructor A	-	Second interview—after camp	20	Phone interview
24	Orientation and mobility instructor C	-	Second interview—after camp	25	Phone interview
25	Mother of potential recipient	C	Second interview—after camp	25	Phone interview
26	Potential guide dog recipient 4	C	Second interview—after camp	20	Phone interview
27	Mother and father of potential recipients	B	Second interview—after camp	30	Joint phone interview
28	Potential guide dog recipient 2	B	Second interview—after camp	25	Phone interview
29	Potential guide dog recipient 3	B	Second interview—after camp	20	Phone interview

Some participants were interviewed more than once.



## Materials

A semi-structured, interview-based methodology was used to enable participation by adolescents with a range of visual abilities. Multiple benefits are associated with this kind of methodology, including that qualitative methods can provide insight into phenomena that might be overlooked by structured surveys and that a level of rapport can be developed between researcher and participant, allowing for deeper disclosure than might otherwise be possible (Tracy, 2012). An interview script was developed from information gathered from adult guide dog studies as well as research of children with vision impairments. The open-ended questions varied based on the type of stakeholder interviewed. For the adolescents, they mainly consisted of expectations/reflections regarding the camp, and future expectations and benefits/challenges of adolescents having a guide dog. However, each participant was permitted to guide the conversation, such that their unique perspective could be represented in the data collected. Initial questions included “what do you currently know about guide dogs?” or “what do you think the benefits (or challenges) of being with a guide dog could be?” Further elaboration on each topic was elicited using prompts involving physical, psychological, and social aspects.

## Procedure

Informed consent was obtained for all participants, who were then interviewed as depicted in Table 1. Most initial interviews were conducted during the first day of the camp, although a few were conducted in the days before the camp commenced. A second round of interviews was conducted 4 to 12 days after the camp. All interviews ranged from 15 minutes to 1 hour, with the majority being approximately 30 minutes in duration. This resulted in over 13 hours of recorded conversations. The interviews were conducted in person or over the phone.

Interviews were audio-recorded, transcribed, and uploaded to QSR International's NVivo 10 qualitative data analysis software for analysis. Inductive content analysis (thematic analysis) provided a framework for preparing (identifying themes) and organizing (coding, grouping, and abstraction) the textual data (Elo & Kyngäs, 2008). Thematic analysis is a core feature of most qualitative analysis methods and is primarily concerned with identifying and analyzing patterns, or themes, that exist within the data (Braun and Clarke, 2006). Importantly, themes are expected to emerge from the data and provide a way to capture patterns of experiences described by participants. This is particularly relevant in contexts where prior research is unavailable and differs markedly from the hypothesis-testing approach favored by quantitative researchers. A 6-step process, as described by Braun and Clarke (2006) was utilized; the researchers familiarized themselves with the data, generated initial codes, searched for themes within those codes, reviewed the themes that emerged, named and defined the themes and, finally, reported on them. Where direct quotes are presented in the following sections, the pauses and repetition which are common in spoken language are removed for clarity in reading (e.g., “...um, they were, well, um...” became “...they were...”).

## Results

The 6-step, inductive content analysis performed, identified 6 themes in the transcripts. These fell into 3 main groups, expected physical, psychological, and social benefits. Each category had 2 main subcategories. Physical benefits involved themes of mobility and safety and psychological benefits involved themes of independence and confidence, whereas social benefits were divided

into companionship and social interaction themes. These are presented in the following sections.

### Physical benefits

#### Mobility

According to all participants, the predominant reason to explore the use of a guide dog at the camp was to improve the handler's mobility. Everyone expected an adolescent's physical mobility would improve due to the dog's training. Instructors emphasized walking more smoothly, with a more normal gait, and parents emphasized that the adolescents would become more accurate in their movements. While all adolescents recognized that mobility would be easier, more efficient, and faster with a guide dog, some could not explain why. Only one child expected their pace to decrease in certain situations like when grocery shopping. Adolescents typically expected that they would be able to do things “everyone else can.” As observed during the camp by an instructor, “I saw a couple of kids realize the benefit of the dog, so the way they were able to walk at a higher, faster pace ... they were really impressed.”

With the expected and experienced increase in mobility, there was subsequently a forecasted increase in freedom of movement. This was expected to persist in both familiar and unfamiliar places by all participants. One parent mentioned, “I think that a dog would certainly assist her outside of her normal environment, much more than what a cane would.” Parents and adolescents expected mobility, especially around traffic and obstacles, would improve compared to using a cane. However, instructors asserted that any potential handler should already have sufficient orientation and mobility skills in these dangerous situations to feel content traveling without fear of getting lost, as a dog is unable to assist them to mentally map where they are in space. Instructors were adamant that criteria to get a guide dog should involve both mobility skills and physical ability to handle the dog as it would be difficult and potentially unsafe to attempt to improve their mobility with this method.

#### Safety

Compared to using a cane, all participants expected guide dog users to experience increased levels of perceived safety (feeling like they are safe) and actual safety (physically not being in danger or at risk of injury). Everyone expected that actual safety would arise through a dog's trained ability to help their handler avoid obstacles, instead of being injured by running into them. One child shared an example of the cane not providing actual safety but expecting that the dog would do so in the same situation:

“There was a time when I was on another guide dogs camp. I was a lot younger then, and we were at this aircraft hangar and not sure that the dog would actually see the little airplane wing in front of me, and guide me around it, but my cane surely didn't and I ended up banging my nose!” Adolescents and parents emphasized that the dog's ability to provide actual safety would arise from its training and inherent capacity to notice things a cane cannot. One parent talked extensively about the physical safety she expected a guide dog would provide:

“I think safety-wise, not just about people that might attack you, I think it's not going to walk out in front of a car, it's not going to let her walk into a tree or bump [her] head on overhanging branches, so I think it's a huge thing. [Daughter] talks about tripping over potholes and things. If she is using her cane properly that shouldn't happen, but overhanging branches and gates open and stuff like that, there are other things that perhaps her cane might miss that the dog won't so she won't hurt

herself". All parents expressed similar levels of confidence in a guide dog as this parent.

Instructors, on the other hand, emphasized that a guide dog, regardless of the recipient, would not provide actual safety 100% of the time. Instructors also emphasized that the handler should not depend on the dog to provide physical protection by attacking/deterring/intimidating a potential attacker, as referenced by the parent previously, because their training would not be conducive to this work. However, the perceived intelligence of the guide dog led parents and adolescents to feel less vulnerable and to hold (potentially unwarranted) expectations of felt safety, which instructors did not encourage. This shows the need to educate both adolescents and parents about what a dog could do for them, especially related to safety when traveling without a parent present.

#### *Psychological benefits*

##### *Independence*

Since the participants expected the handler would gain mobility skills and would be under the impression that they were safer, it is not surprising that they also thought handlers would have a greater ability to be independent, a psychological benefit. The importance participants placed on independence was emphasized when they were asked to provide "one word to describe a guide dog." Independence was declared 3 times more often than any other word. All participants expected adolescents would feel more independent, predominantly because they would not need to rely on others as much since they would feel they could rely on the dog's training, leading to a new sense of freedom. One child stated "mostly [I] want to be able to travel independently and not rely on anyone to hold onto." Parents expected their child would also develop an increased desire to engage in independent travel, especially as they get older. This was in accordance with instructors' reports of adult handlers who developed an increased motivation to be independent after being placed with their dog.

Adolescents commonly expected that gaining independence would involve being able to do things without a parent being present. This stemmed from their expected orientation and mobility skills improvement, which would enable them to navigate within a place more easily when without another person, than they would with a cane. One staff member noted the increased motivation to be independent by saying: "so a guide dog really can facilitate that drive and intrinsic motivation to go out and do things by themselves and grow their independence." However, some adolescents' expression of a desire to be independent was idealized through their belief that the dog would know what to do, for example, when crossing the street, again emphasizing the need for appropriate education.

##### *Confidence*

All participants expected that an adolescent would gain confidence in their mobility when working with a guide dog. Subsequently, they also expected them to be more comfortable and confident traveling because the dog would notice things they did not, guiding them around obstacles and assisting with road crossings. Instructors recognized that adolescents demonstrated confidence during the camp by traveling in a less self-protected way as they became less worried and fearful about traveling. With increased mobility, adolescents also felt they would not need to rely on their parent to sight guide them everywhere. As one child put it, "[the guide dog will improve] my confidence with my not having my mom near me for directions."

Confidence in mobility was expected to lead to an overall increase in self-confidence. Although parents and adolescents found it difficult to express why instructors recognized that this confidence would come from having mastered a difficult skill that not many people are capable of. One parent stated that, since working with the dogs at the camp, her children were "more direct on where they want to go in life on the guide dog side of things, and knowing that there is going to be some other direction in their life that they can take, that's a big help as well."

#### *Social benefits*

##### *Companionship*

All types of participants expected a major benefit would involve the dog's capacity to provide companionship, a direct social benefit dependent on the shared relationship between handler and dog. Adolescents believed that the constant presence of the dog would lead to a strong relationship and close emotional bond. One mother assumed the dog would help her child emotionally when she was frustrated and muttering to herself, as she explained to her daughter during the interview, "but then you don't sound like a crazy person, because your dog will then respond to it, your dog knows if you're angry...it can give you a bit of a cuddle." This expression of companionship emphasized her understanding that people who talk to their dog compared to people who talk themselves are viewed differently by society. This is clearly not something the dogs are specifically trained for, but it nonetheless represents an advantage not associated with other mobility aids such as canes. Dogs are special in that they are able to ultimately respond to their handler's distress.

Instructors assumed that the adolescent would be less lonely from the companionship of the dog. Yet one parent and child admitted that minimizing loneliness had not been anticipated as a benefit of a guide dog. However, most participants expressed that the dog would be someone the adolescent would feel able to confide in and pet, thereby relieving loneliness. One instructor retold a story about a child who expressed how she does not feel alone when the dog is with her:

"At the end of [the camp] she was the last one to get picked up and I had to go to the office to get something before I left as well, so I said to her 'I've got to go up to the office, you are the only one in the room, do you mind if I leave you? You will be the only one in the room,' and she turned around and said 'aw, yeah, but I'm not alone, I've got [the dog] here,' so I think [there is] that sense of 'I'm not alone when I have a dog'." Many adolescents reported during and after the camp the enjoyment they experienced from physical interaction and companionship with the dog, which parents emphasized as well.

##### *Social interactions*

The natural qualities of the dog were anticipated to facilitate social connections with other people. Some participants mentioned that they expected the dog to become like a member of the family. This was assumed to influence family dynamics. Adolescents reported believing their parents would be proud of them for getting a guide dog. While instructors expected parents to experience initial resentment toward the dog, due to the child becoming less reliant on them and more dependent on the dog. However, it was believed they would learn to relinquish this control. Besides one parent noting expected jealousy from other siblings, no other parent or adolescent anticipated any negative impact on their family. "Probably bring us a bit closer together, actually, just with talking about it and stuff like that, yeah because it wouldn't change our family in any way," said one parent.



Most participants expected an adolescent would increase their strength of relationships with peers. As a staff member stated, “it makes a really huge impact on your social networks, both ones that you’ve already got, and an ability to grow and create new ones.” Parents and instructors recognized that the dog would “humanize” the adolescent by becoming a common interest between the adolescent and their peers, making it easier for others to talk to the adolescent when the dog is around. This would increase the frequency of positive social interactions, enabling friendships to develop and current friendships to grow. One parent who had seen other guide dogs working in the community illustrated this by emphasizing that people change their demeanor around the handler:

“People have a different perception of you, if you’ve got a guide dog, like if you are walking down the street, and you’ve got a cane, you see people, they move out of the way and they grab their kids up. ‘Quick, get out of the way, get out of the way!’ If you see someone walking a guide dog, they squat down, and say, ‘look that lady can’t see, she’s got a guide dog,’ like it’s just a whole different demeanor.” A guide dog was expected to help others understand vision impairments in a more positive and educational way. Teacher-student relationships were also expected to change when the adolescent received their guide dog. One parent expected the dog would relieve pressure and reduce worry about their child’s presence in class. However, some instructors emphasized challenges unrecognized by parents or children. These challenges involved changing the traditional knowledge dynamic of the teacher-student relationship because the adolescent would know more than the teacher about the guide dog, and teachers may be uncertain about their role with the dog. All these relationships foster some uncertainty but ultimately would be expected to become positive.

## Discussion

From the preceding analysis, it is evident that parents, adolescents, and instructors all believed that adolescents with vision impairment would receive 3 main classes of benefits from having a guide dog: physical, psychological, and social. These are congruent with benefits experienced by adult guide dog handlers (Whitmarsh, 2005; Wiggett-Barnard & Steel, 2008). The physical benefits of improved mobility and safety are central to traditional conceptualizations of guide dogs (Naderi et al., 2001). Psychological benefits, including increased independence, motivation, and confidence, are also commonly reported in the guide dog literature but are less central in the traditional guide dog model (Whitmarsh, 2005; Wiggett-Barnard and Steel, 2008; Craigon et al., 2017). Social benefits, including increased positive social interactions with others and decreased loneliness due to formation of a strong bond, are commonly perceived as a welcome “side effect” of working with a guide dog rather than a cane (Sanders, 2000; Whitmarsh, 2005). These are not normally acknowledged as valid reasons for acquiring a guide dog.

A schematic representation of the traditional conceptualization of guide dog benefits, as perceived by the authors based on their review of available literature, is depicted in Figure 1. Physical benefits arising from trained abilities are placed in the core of the diagram and are large in size because these were most often identified by participants as the main reason for wanting a guide dog, consistent with other literature (Naderi et al., 2001; Wiggett-Barnard and Steel, 2008). The outer layers depict psychological and social benefits, which are smaller and less central, as less emphasis is traditionally placed on these benefits by guide dog organizations. Yet these benefits were identified in the present

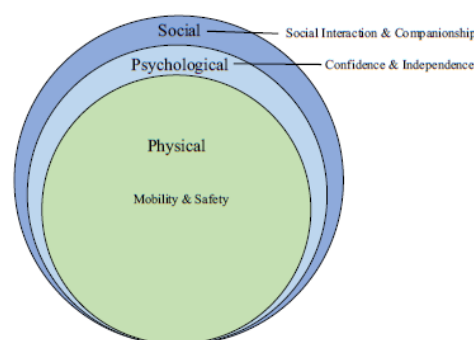


Figure 1. This diagram depicts the authors' schematic representation of the traditional conceptualization of guide dogs. The physical (mobility and safety) benefits placed in the core of the diagram reflect reasons why people acquire a guide dog and the functions that guide dogs are specifically trained for. The middle and outer layers are smaller and sit outside the core benefits, as they are thought to emerge from the presence of the dog and could be considered “bonus” benefits, not derived from guide dog-specific training.

study as being very important, and noted in other service dog studies as being just as important, or even more important, than trained tasks (Valentine et al., 1993; Gaunet and Milliet, 2010; Spence, 2015). These benefits, especially social, are often conceptualized by organizations as “added bonuses” rather than the main reason for obtaining a guide dog, perhaps because they do not reflect the specific training that a guide dog receives, but could, in principle, arise from any well-behaved, obedient dog.

Even though Figure 1 depicts the traditional, and very successful, conceptualization of guide dogs, it may not be the best way to conceptualize how a service dog, defined more broadly than a guide dog, might benefit an adolescent handler. Adolescents with vision impairments are in a very formative phase of their life and face many challenges, many of which impact them both immediately and in the future. Focusing entirely on the physical benefits normally associated with guide dog use may obscure other significant benefits that could be provided by a service dog. In the following discussion, we present ideas about how the various benefits associated with guide and service dogs might contribute to thriving, and we conclude that some of these benefits might outweigh any potential disadvantages associated with using a facilitated service dog model.

An adolescent's ability to thrive could clearly be positively impacted by the expected physical benefits of increased mobility and perceived/actual safety, enabling flourishing in ways previously precluded by the physical constraints of vision impairment. However, some adolescents have a fundamental physical inability to handle a dog, a valid concern for guide dog organizations. Ultimately, adolescents may not have the means to use a guide dog in the same manner as an adult. Therefore, this population may not experience improved mobility to the same extent, and their actual safety may decline if a traditional guide dog model is employed. The inability to handle a dog could be resolved by using the facilitated service dog model used successfully for children with other disabilities, whereby parents facilitate the relationship and take responsibility for handling the dog. Unfortunately, this requires the presence of the parent whenever the dog is in use, thereby replicating the physical benefits the parent is already providing and rendering the dog redundant. These limitations are precisely why most organizations will not provide adolescents with a guide dog. This is not to say, however, that an adolescent would not gain any benefits in mobility and safety from having access to a facilitated

guide dog. Rather, under parental supervision, an adolescent could experience improved mobility and feelings of safety, preparing them for life as an adult guide dog user.

One psychological benefit expected to be associated with guide dog use is increased independence. In order for an adolescent to gain independence, however, they need the physical ability to manage a guide dog safely, and permission from parents and the dog's legal owner (typically the providing organization) to act independently. Given the constraints discussed previously, this benefit may not be forthcoming. Parental restrictions on independence are not, however, exclusive to adolescents with vision impairment (Lindemann, 2012). Overcoming this, other types of service dogs have been noted to enable teenagers to enjoy increased age-appropriate independence similar to that experienced among their peers without disability, whereas younger adolescents would still be reliant on parents whether they have a disability or not (Ng et al., 2000). Hence, while adolescents might not enjoy complete independence following acquisition of a service dog, a greater level of independence than previously experienced might still be possible.

In general, social benefits were expected to emanate directly from the dog through companionship or indirectly through their ability to increase positive relationships for the handler. Social benefits are extremely important for adolescents with vision impairments because social interactions are habitually difficult to initiate and sustain for these individuals, often leading to social isolation (Ammerman et al., 1986; Huurre et al., 1999; Celeste, 2006; 2007), as most adolescents in our study confided that they felt. Overall, students with low vision or blindness are involved in 4 times fewer social interactions compared to sighted youth (Wolffe and Sacks, 1997). Therefore, a guide dog's ability to provide positive experiences in the school context and propensity to create healthy lasting relationships with peers could be very important to an adolescent (Lerner et al., 2011). These benefits could provide the most value for an adolescent, especially if they help them stay in school. At present, adolescents are unable to receive these benefits until they are 18 years old and potentially out of school, where the benefits may come too late and hinder their long-term ability to thrive. We contend, however, that these same benefits could be provided by a service dog whether or not that dog was trained as a guide dog.

In summary, then, an adolescent may not be able to receive the full range of physical benefits of a highly trained guide dog, due to their immaturity. Restricting access to a dog entirely, however, could mean they are unable to receive psychological and social benefits, which could impact their ability to thrive in many ways. We propose a shift in the current conceptualization of service dogs for vision impaired adolescents, to create a more inclusive model. Figure 2 depicts this change by inverting the benefits from the traditional view of guide dogs, such that the social benefits are recognized as being of central importance. This change is important because any service dog should be able to provide these core benefits; only the outer layer is specific to guide dogs.

With this revised conceptualization, it is easier to see how an adolescent with a visual impairment could obtain critical benefits from a facilitated service dog. Ordinarily, a facilitated model would not provide improvements in physical mobility, safety, or independence for the adolescent, as the only travel they would do with their dog would also be accompanied by their parent. However, under careful supervision by the parent, potentially from a distance, adolescents could gain a sense of these benefits while the parent can still be in control and monitoring the situation. Moreover, if expectations of the dog shift away from provision of physical benefits, organizations could potentially employ "support" dogs that were not selected for further guide dog-specific training to

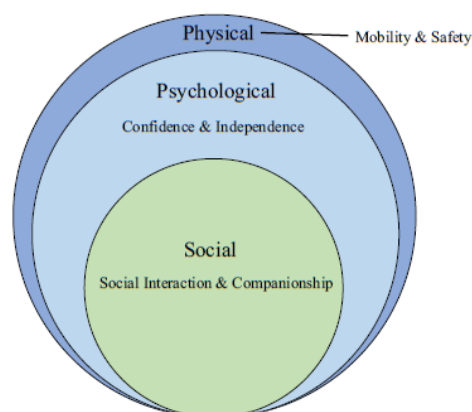


Figure 2. Proposed reconceptualization of service dogs for vision-impaired adolescents, based on the expectations and abilities of participants. The social benefits make up the core of this diagram as they may be the most important service able to be provided by a service dog to this population and because they are central to the challenges faced by vision-impaired adolescents. Emanating from the social benefits are psychological benefits, also able to be provided by a trained service dog. The outer layer involves the physical benefits which are specific to a guide dog's trained ability. Adolescents may be limited in the physical benefits they are able to obtain, but this may be less important to this population than social and psychological benefits and is therefore a smaller layer.

their advantage, by placing these highly trained and public access certified dogs with an adolescent and their parent. Due to the parent's ability to assist in maintaining the welfare and control of the dog, guide dog organizations' concerns about placing guide dogs with adolescents would be relieved.

To our knowledge, only a few internationally accredited guide dog organizations have a program to place dogs with visually impaired adolescents. In these programs, the dogs are typically placed within the family as a companion dog, with the organization expressing no specific benefits to the child. Potentially, these companion dogs create an easier transition for an adolescent to become an adult guide dog handler but replacing them with facilitated support dogs may be even more beneficial in terms of easing the transition for adolescents and their families before receiving a fully trained guide dog and also in terms of providing benefits in the intervening period. This is important because, during the camp, it became apparent that some adolescents had no knowledge of, or experience with, dogs. During interviews, it was also discovered that parents and adolescents had many misconceptions about the abilities of a guide dog, due to their lack of experience and adequate education. However, placing a facilitated support dog in the home, before a guide dog, would assist in clarifying these misconceptions. It would also relieve some challenges associated with the typical intensive month-long training for a handler, which is not conducive for adolescents due to the time commitment and level of information provided (Bruce et al., 2015). Ultimately, an adolescent who is able to demonstrate knowledge, skills, and maturity equal to that of an adult guide dog handler should not be restricted from receiving a guide dog based purely on their age.

Although we believe that providing support dogs to adolescents with vision impairments before their receiving a guide dog could provide many life-altering benefits, it is important to acknowledge that this study was limited by a very small sample size. In qualitative research, the issue of sample size is often debated. Baker and Edwards (2012) argue that an adequate sample size is typically 30, while Guest et al (2006) refers instead to



saturation, the point at which new information ceases to result in identification of new themes or codes. It was not possible in the present study to obtain a sufficient number of participants to determine if saturation had been reached, due to the simple fact that there are relatively few vision-impaired adolescents and even fewer considering working with a guide dog. Of the 6 eligible participants attending the camp, 4 accepted the invitation to participate in the study, a recruitment rate of 67%. Parents and training staff were also interviewed in order to obtain additional information, but it is conceded that a larger sample size would have strengthened the study considerably.

This need not detract from the importance of the findings; however, it is particularly encouraging that the themes identified in this study are consistent with those reported in other contexts where dogs are being used to assist children and adolescents. Mobility service dogs (Ng et al., 2000), seizure alert dogs (Kirtan et al., 2004), and autism assistance dogs have been provided to children (Burrows, Adams, & Millman, 2008; Burrows, Adams, & Spiers, 2008; Hall et al., 2016), and it has been reported previously that social and psychological benefits are sometimes profound (Davis et al., 2004; Burrows, Adams, & Spiers, 2008). Nonetheless, there are still many considerations before such a program can be implemented for visually impaired adolescents. First, what will happen to the support dog when the adolescent is ready for a guide dog, and the organization has a guide dog available for them? Second, will the support dogs have public access rights when the parent is present? Third, where should organizations draw the line between a support dog and service dog? Fourth, who is eligible to receive a support dog? Even with these challenges, we believe providing support dogs to adolescents would be a major progressive step for guide dog organizations to work toward, enabling adolescents with vision impairments the opportunity to thrive earlier in life.

## Conclusion

In conclusion, the participants in our study believed adolescents with vision impairment would receive physical, psychological, and social benefits upon acquisition of a guide dog. The expected benefits harmonized with the known benefits adult handlers receive from a guide dog, and with the skills guide dogs are already bred for and trained to perform. However, adolescents are unlikely to receive some of these benefits due to constraints in their physical abilities and capacity to be responsible for their dog. While these constraints currently render adolescents ineligible to receive a guide dog, we propose a revised facilitated service dog model, in which dogs trained to provide support, but not necessarily to guide, are able to benefit adolescent owners in many critical ways, while also helping to prepare them for when they are able to receive a fully trained guide dog. We suggest that guide dog organizations consider implementing support dogs for adolescents who are not yet completely capable of receiving a guide dog but would benefit from the psychological and social assistance a support dog provides. In the meantime, we recommend that guide dog organizations reconsider age restrictions and provide properly educated and qualified adolescents the opportunity to work with a guide dog. This may profoundly impact their immediate- and long-term ability to thrive.

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## Ethical considerations

This study has ethical approval from the La Trobe University Human Ethics Committee (HEC:16-092).

## Conflict of interest

The authors declare no conflict of interest.

## Authorship statement

The idea for the paper was conceived by Jennifer Gravrok, Tiffani Howell, and Pauleen Bennett. The study was designed by Jennifer Gravrok, Dan Bendrups, Tiffani Howell, and Pauleen Bennett and performed by Jennifer Gravrok. The data were analyzed by Jennifer Gravrok. The paper was written by Jennifer Gravrok, with guidance from Dan Bendrups, Tiffani Howell, and Pauleen Bennett.

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## Appendix E: Physiological data for case study #4

Physiological data was collected before handlers received their dog and six months after they received their dog. At these time points they were asked to wear a Withings Pulse Ox activity tracker to bed, set on sleep mode. When this feature was turned on it would measure the time it took participants to fall asleep, the amount of time they spent in light sleep, deep sleep and awake. It also showed how many times the participants woke up during the night. Figure 1 shows how long H4 slept on three nights before and after receiving his AD.

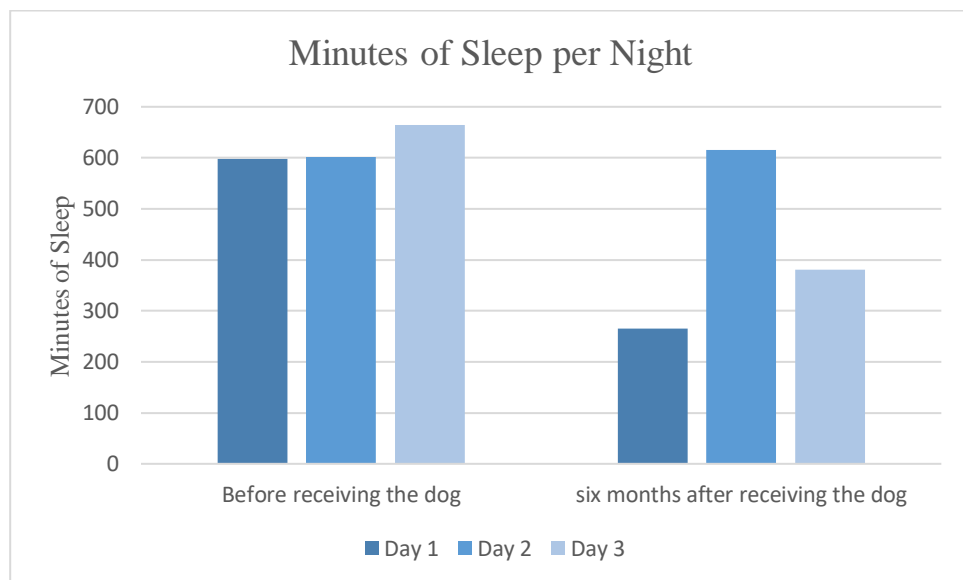


Figure 1  
Minutes of sleep H4 got over three nights before and six months after receiving his assistance dog.

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## Appendix G: Letter of acceptance from People and Animals: The International Journal of Research and Practice



Jo-Ann Fowler <editor-paij-1029-2380853@dlpurdue.bepress.com>

Fri 10/18/2019 8:22 PM

Jennifer Gravrok; The Authors <authors-paij-1029@dlpurdue.bepress.com> ✉



Dear Jennifer Gravrok, Dan Bendrups, Tiffani J. Howell, and Pauleen C. Bennett

**Congratulations!** After careful review, your article "Expectations regarding receiving an assistance dog: Perceptions of prospective recipients, family members, and assistance dog instructors" has been accepted, subject to minor revisions, into People and Animals: The International Journal of Research and Practice. We look forward to publishing your article as soon as possible.

Please review the feedback from the reviewers and make the necessary amends.

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