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# Development of a Measure of Positive and Negative Aspects of Dog Owners' Attachment to Their Pets

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DEVELOPMENT OF A MEASURE OF POSITIVE AND NEGATIVE ASPECTS  
OF DOG OWNERS' ATTACHMENT TO THEIR PETS

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2016

DEVELOPMENT OF A MEASURE OF POSITIVE AND NEGATIVE ASPECTS  
OF DOG OWNERS' ATTACHMENT TO THEIR PETS

by

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## **Abstract**

This thesis describes the development of the Assessment of Dog Owners' Behaviors and Experiences, Version I (ADOBE-I), a multi-scale measure of positive and negative aspects of dog ownership. In Study 1 a pool of 265 items was administered online to 352 participants on Mechanical Turk (M-Turk). Exploratory Factor Analysis of responses was used to construct the ADOBE-I, which includes 58 items and five scales, Dog-Owner Bond, Legal Problems, Hostile Dog, Obedient Dog, and Care for Dog's Health, and one supplemental scale, Dog as Child. In Study 2 the psychometric properties of the ADOBE-I scales were examined in a sample of 96 participants on M-Turk. All ADOBE-I scales except one were found to have adequate to excellent internal reliability. Supporting concurrent validity, the ADOBE-I scales were found to be substantially and meaningfully correlated with other existing pet measures. A series of hypotheses were tested as to why some people develop problematic attachments to their dogs. Contrary to a prediction based on the hoarding theory of dog-owner attachment, the length of time of dog ownership was not significantly correlated with the dog-owner bond. Furthermore, attachment to a dog was not significantly correlated with feelings of loneliness. Lastly, some of the ADOBE-I scales were found to be correlated with the Big Five personality traits. Specifically, the ADOBE-I Care for Dog's Health scale was found to be positively correlated with Conscientiousness, and the ADOBE-I Legal Problems scale and Hostile Dog scale were negatively correlated with Openness and Agreeableness. The ADOBE-2, a revision of the ADOBE-I with several new scales, is also introduced.

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## **Introduction**

Domestic animals are an important part of daily life for many people in America and other countries. It is estimated that more than 63% of homes in the United States own a pet, usually a cat or dog (Walsh, 2009). As Fine stated, “Over the decades, we have watched our relationships with domestic animals flourish and our appreciation of their significance in our lives increase” (Fine, 2011).

According to Szasz and Voith, (as cited in Belk, 1996) some pet owners have been criticized for displaying maladaptive attachments to their companion animals. Based on anecdotal evidence, it appears that some problems of this type can arise when an owner invests excessive time and energy in a pet. For example, Belk (1996) described a woman who would not leave her house for more than 4 hours because she feared it would be inconvenient to her dog. As another example, a woman expended considerable time and effort trying to find seat belts and air bags for her dog so he would not be injured in case of a car accident. Furthermore, some owners allow their pets to damage belongings, create unsanitary conditions, or disrupt social relationships. For example, pet attachment can become a problem when one family member likes the pet and another does not or when the pet prefers a family member over another. Despite such problems, some dog owners remain deeply attached to their pets and will not consider giving them up (Belk, 1996).

Additional examples of problematic behaviors that dog owners can exhibit toward their pet include the following: feeding the dog from the same plate or table that humans eat from; not setting boundaries for the dog when visitors are present; letting the dog sleep in the owner's bed; curtailing social activities or leaving social gatherings early because of the dog; avoiding going out because of the dog; neglecting human relationships because of a preference for the dog; or

failing to properly discipline or enforce rules with the dog. Such problematic behaviors will be referred to in this thesis as Pet Attachment with Negative Features (PAW-NF).

Why do some people develop PAW-NF with their pets, in which the needs of the pet or the relationship with the pet seems be over-valued, so that human needs or relationships with human beings are neglected or sometimes assigned to secondary importance? There are at least four tentative theoretical frameworks that might help explain this phenomenon. The first theory, here called the "hoarding theory," proposes that over-attachment to one or more pets can be a form of hoarding and is a manifestation of Obsessive-Compulsive Disorder (OCD) or Obsessive Compulsive Personality Disorder (OCPD).

A second theory, here called "pets as persons", proposes that some people come to view their pets as members of their families, and therefore come to attribute human needs and rights to them. According to this cognitively based theory, over-attachment to a pet occurs when a person comes to categorize their pet as similar to a human child or baby in respect to needs or rights.

A third theory, here called "disordered relationship theory," focuses on personality-based deficiencies in interpersonal relationships. According to this theory, some individuals are prone to exhibit negative patterns in their relationships with other human beings, and these same negative patterns are replicated in their relationships with their dogs.

The fourth and last theory, here called "emotional deprivation theory," focuses on pets as a substitute for satisfying emotional attachments with other people. According to this theory, some individuals have unmet dependency needs (i.e., unsatisfied needs for closeness to other people) and try to compensate by forming strong emotional attachments to their pets. The following sections explain and expand each of these four theories.

## **OVER-ATTACHMENT TO PETS AS A FORM OF COMPULSIVE HOARDING**

Compulsive hoarding has been described as: “(1) the acquisition of and failure to discard possessions that appear to be worthless or of limited value, (2) living spaces sufficiently cluttered so as to preclude activities for which those activities were designed, and (3) significant distress or impairment in functioning caused by the hoarding” (Grisham, Frost, Steketee, Kim, Tarkoff, & Hood, 2009; Steketee & Frost, 2003). The DSM-IV-TR hoarding criterion under Obsessive Compulsive Personality Disorder states that it is the (1) “inability to discard worn-out or worthless objects even when they have no sentimental value” (American Psychiatric Association [APA], 2000), that is, the value of the possession is limited or worthless. The central DSM-5 criterion for hoarding disorder is “persistent difficulty discarding or parting with possessions, regardless of their actual value” (American Psychiatric Association [APA], 2013).

Research indicates that hoarders attribute sentimental value to possessions and exhibit a strong attachment to them (Grisham et. al., 2009). For example, in a study by Frost and Gross (1993), hoarders reported a greater tendency to save objects for sentimental reasons and a greater level of emotional attachment to their possessions than did non-hoarders. Frost, Hartl, Christian, & Williams (1995) conducted a study on a college and community-based sample and found support for this assertion, where higher levels of hoarding were associated with "hypersentimentality" about possessions.

At least two theories have sought to explain why hoarders form strong attachments to objects. According to Frost et al. (1995), “one theme which has frequently been repeated in theorizing about saving and hoarding is that possessions are viewed as extensions of the self.” According to this theory, some possessions are closely linked to the hoarder’s sense of identity

and in some extreme cases, human-like qualities are attributed to them. When other people touch, move, or use the possessions the hoarder feels violated.

A second theory holds that possessions create a sense of security and emotional comfort. Hoarders gain a feeling of being safe by collecting, saving, and being close to their possessions. According to this theory, discarding items is threatening to hoarders because it is equivalent to losing control of their environment (Frankenburg, 1984; Frost et al., 1995; Frost & Hartl, 1996; Rachman, 1983; Sartory, Master & Rachman, 1989).

### **Relationship of Hoarding to OCD and OCPD**

Obsessive-compulsive Disorder (OCD) is a disorder characterized by the occurrence of either obsessions, compulsions, or in most cases, both. Obsessions are unwanted ideas or thoughts that are persistent and intrusive, and cause anxiety to the person experiencing them. Compulsions are repetitive behaviors or mental acts that are performed in order to alleviate or reduce the anxiety. The obsessions and compulsions are time consuming and affect the person in one or more areas of daily functioning (APA, 2013).

Hoarding has long been considered a symptom of OCD. For example, hoarding is included as a symptom or symptom dimension of OCD on some psychological scales such as the Obsessive-Compulsive Inventory- Revised (OCI-R; Foa et al., 2002). It is also been included in some self-report measures of OCD (Frost & Gross, 1993). However, the relationship between hoarding and obsessive disorders has been debated among researchers. Reflecting differences of opinion among experts, hoarding was listed as a symptom of OCPD in the DSM-IV-TR, but not as a symptom of OCD.

Studies on the relationship of hoarding to OCD have yielded inconclusive results. In a literature review on the subject, Pertusa et al. (2010) found some evidence to support and some

evidence to disconfirm the assumption that hoarding is a symptom of OCD. Supporting the idea that hoarding may be a symptom of OCD, research has shown that hoarders' difficulty discarding possessions is sometimes due to fear --- the fear of mistakenly discarding an item that might have a future use, the fear of not being able to distinguish what should be discarded from what should not, or the fear of discarding an object with which the hoarder has formed an emotional attachment. Such fears can be regarded as “obsessions” and the urge to keep items as “compulsions.”

On the other hand, some data reviewed by Pertusa et al. (2010) suggest that hoarding may not be a symptom of OCD. Hoarding is a somewhat more "passive" condition than OCD: That is, hoarders experience intense distress, anger or grief only when they are confronted by third parties with having to discard items, whereas OCD patients experience intense anxiety when confronted with situations they would rather avoid. A second important difference is the ego-syntonic nature of hoarding symptoms and the lack of insight. Hoarders describe the acquisition of items as pleasurable whereas OCD patients describe compulsions as anxiety relievers (Pertusa et al., 2010). Regarding the lack of insight, hoarders justify their behavior as normal and necessary whereas OCD patients recognize their compulsions as senseless and want to stop them, although they find that they cannot (Steketee & Frost, 2003).

Obsessive Compulsive Personality Disorder (OCPD) is a personality disorder that is characterized by an excessive preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of efficiency, flexibility, and openness (APA, 2013). Researchers have examined the relationship of hoarding to OCPD. Since hoarding is listed as one of the possible symptoms of OCPD it is important to review a question examined by Pertusa et al., (2010) in regards to the relationship between hoarding and OCPD: How related is hoarding to

the other criteria for OCPD? Under the DSM-IV-TR, the 8 diagnostic criteria for this personality disorder were as follows:

- (1) Preoccupation with details, rules, organization, or schedules to the extent that the major point of the activity is lost.
- (2) Perfectionist attitude that interferes with task completion.
- (3) Excessive devotion to work and productivity to the exclusion of leisure activities and friendships.
- (4) Over-conscientiousness, scrupulosity, and inflexibility about matters of morality, ethics, or values.
- (5) Inability to discard objects.
- (6) Reluctance to delegate tasks or work with others unless it is done his or her way.
- (7) Miserliness and hoarding of money or possessions.
- (8) Rigidity and stubbornness (APA, 2000).

Grilo (2004) examined the predictive validity of the 8 OCPD criteria in a sample of 211 patients with binge eating disorder and OCPD. He found that the two criteria that most strongly predicted OCPD were “perfectionism” and “preoccupied with details”. These criteria had a positive predictive power (PPP; i.e. probability of having the disorder, given that one meets the criterion) of .68 and .64, respectively. Among the criteria with the lowest PPP were “hoarding” with a PPP of .37, “miserly” with a PPP of .35, and “rigid and stubborn” with a PPP of .42.

Hummelen, Wilberg, Pedersen, and Karterud (2008) examined inter-correlations among the eight criteria of OCPD and found that hoarding had a mean correlation of .27 with the rest of the OCPD criteria. Two other criteria -- miserly, rigid/stubborn -- also exhibited weak mean correlations (.22 and .28, respectively) with the rest of the OCPD criteria. These findings and those

of Grilo (2004) suggest that hoarding is only weakly related to the other criteria for OCPD and that removing it as a criterion might strengthen the validity of the OCPD diagnosis. As Pertusa et al, (2010) stated, “The hoarding criterion sits rather uncomfortably among the other OCPD criteria.”

It is important to notice that most of the available literature is based on a diagnostic manual no longer in use, the DSM-IV-TR (APA, 2000). The current diagnostic manual, the DSM-5 (APA, 2013), lists Obsessive-Compulsive Disorder and Hoarding Disorder as separate disorders. However, despite the research findings already discussed here, hoarding is still one of the eight criteria of OCPD in the DSM-5. Below are the DSM-5 (APA, 2013) criteria for hoarding disorder.

- A. Persistent difficulty discarding or parting with possessions, regardless of their actual value
- B. The difficulty is due to a perceived need to save the items and to distress associated with discarding them
- C. The difficulty discarding items results in the accumulation of possessions that congest and clutter active living areas and substantially compromises their intended use
- D. The hoarding causes clinically significant distress or impairment in social, occupational, or other important areas of functioning

### **The Cognitive Behavioral Model of Compulsive Hoarding**

If over-attachment to pets is a form of hoarding or related to hoarding, then theories and empirical findings about hoarding may shed light on why some individuals become overly attached to their pets. Among theories about hoarding, the cognitive behavioral model is currently the most influential. According to this model, hoarding symptoms are a result of deficits in the following areas: (a) information processing, (b) beliefs about and attachment to possessions, and (c) distress and behavioral avoidance (Frost & Hartl, 1996; Steketee & Frost, 2003). These deficits are discussed in the following subsections.



### **Information processing deficit**

Steketee and Frost, (2003) have concluded that individuals who engage in compulsive hoarding have information processing deficits in four areas: memory, attention, decision-making, and categorization. In regards to memory, Hartl et al. (2004) found that, compared with matched controls, individuals with compulsive hoarding showed impairment in their performance on several memory tests, including measures of verbal and nonverbal learning and free recall. Furthermore, in a study by Frost and Hartl (1996), individuals with hoarding disorder reported low confidence in their memories and felt it was important to keep possessions in sight to avoid forgetting them.

Regarding attention, Steketee and Frost (2003) reported that some hoarders show difficulty focusing and staying on tasks. When compared to a control group, hoarders scored higher on a measure of Attention Deficit/Hyperactivity Disorder (ADHD).

Regarding decision-making processes, Frost and Gross, (1993) and Frost and Shows (as cited in Frost and Hartl, 1996), found strong correlations between hoarding and indecisiveness ( $r = .50$  to  $.61$ ). Frost and Hartl (1996) speculate that indecisiveness may partially explain why hoarders have difficulty discarding possessions. Saving an item allows a hoarder to postpone decision-making and avoid the fear of making a mistake.

Regarding categorization, Reed (as cited in Frost and Hartl, 1996) found that hoarders define category boundaries too narrowly (under-inclusion) because their concepts are more detailed and require more information for decision making, resulting in smaller sizes of categories and larger numbers of categories. Persons and Foa (1984) found that obsessive compulsives created more categories when asked to classify words into piles that belonged together. A consequence of under-inclusiveness is that all attributes of a possession must be considered before

discarding it. Because each possession is unique, it cannot be categorized with similar objects, and thus there is no way to organize possessions (Frost and Hartl, 1996).

### **Potentially Dysfunctional Attitudes and Beliefs**

Evidence has been found that hoarding is associated with dysfunctional attitudes and beliefs. According to the first systematic description of compulsive hoarding, published by Frost and Gross in 1993, compulsive hoarding is the inability to discard items that have no sentimental value. However, Frost, Hartl, Christian, & Williams (1995) later found that hoarders often display sentimentality and attachment to the objects they retain.

Steketee et al., (2003) using a self-report scale, found that hoarders often have potentially dysfunctional attitudes and beliefs in four areas when trying to dispose of possessions: memory, responsibility, control, and emotional attachment. Regarding memory, hoarders may believe their memory is poor and that they need to keep items in plain sight as reminders. Frost and Hartl (1996) proposed that hoarders lack confidence in their ability to remember information and overrate the need to remember or keep a record of information. To test this hypothesis, Hartl et al. (2004) administered self-reports of memory confidence, perceived consequences of forgetting, importance of remembering, and need to keep possessions in sight to a group of hoarders and a control group, composed by university students and people from the community. It was found that the hoarders reported significantly less confidence in their memory and made more catastrophic evaluations of the consequences of forgetting information than the comparison group did.

Regarding control, hoarders may have unreasonable expectations regarding negative or catastrophic consequences if they lose control of their possessions. Furby (1978) suggested that beliefs about control are central to the meaning of possessions. In other words, people obtain and

retain objects because they believe they must control how they are used, therefore controlling their environment.

Regarding responsibility, hoarders may have an unreasonable belief that they are obligated to take care of possessions and save them for people who may need them. Consistent with Furby's hypothesis about control, hoarders appear to have an exaggerated need and desire to maintain control and a greater sense of responsibility about what they save (Frost et al., 1995; Frost & Gross, 1993). Regarding emotional attachment, hoarders may overestimate their possessions' value or uniqueness, rely on them as a source of comfort, and over-estimate the negative consequences if these possessions were lost (see Frost & Hartl, 1996; Frost, Hartl, Christian, & Williams, 1995, for a review).

### **Distress and behavioral avoidance**

According to Steketee and Frost (2003), the psychological factors that lead to hoarding behavior can be conceptualized as avoidance behaviors. For example, retaining a possession allows the hoarder to avoid or postpone making a decision, thus avoiding anxiety about making the wrong decision and throwing out a needed possession. Similarly, retaining a possession allows the hoarder to avoid the difficult task of remembering and evaluating information regarding the value of the possession and the reasons for retaining or discarding it. In addition, retaining a possession avoids the emotional distress associated with the discarding of a loved object (Frost & Hartl, 1996). Thus, Steketee and Frost (p. 915) conclude: "Compulsive acquisition and hoarding are conceptualized as avoidance behaviors to avoid feelings of anxiety and loss."

### **Animal Hoarding**

Although prototypical examples of hoarding involve dysfunctional acquisition and retention of inanimate objects, some writers have recently drawn attention to cases that involve

acquisition and retention of animals (e.g., Nathanson and Patronek, 2012). Such cases, in which a hoarder acquires a large number of dogs, cats, or other animals and fails to provide them with acceptable care, regularly come to the attention of public health or legal officials. Reports from animal control agencies suggest that 700 to 2000 such cases of animal hoarding are reported to authorities in the United States each year (Patronek, 1999).

According to Nathanson and Patronek (2012), a typical case of animal hoarding involves the following features: (a) failure to provide minimal standards of sanitation, space, nutrition and veterinary care for animals, (b) inability to recognize the negative effects on the welfare of the animals, the hoarder, and other people, (c) denial or minimization of the negative effects, and (d) obsessive attempts to keep or accumulate more animals despite the obvious inability to care for them.

### **Other Theories Regarding Over-Attachment to Animals**

As has been shown, one approach to understanding why some people become over-attached to animals is to conceptualize such behavior as a type of hoarding. There are two advantages to this approach: First, empirical studies on hoarding behavior are available in the scientific literature, including some studies on the specific problem of animal hoarding. Second, a cognitive-behavioral model of hoarding (and by extension, animal hoarding) has been developed by Steketee and Frost (2003).

However, it is probably premature to assume that PAW-NF is a form of hoarding and best explained by the cognitive-behavioral model of Steketee and Frost (2003). In the following sections, several other tentative explanations are proposed for why some individuals develop PAW-NF. In general, these theories are not as well-developed as those regarding hoarding.

However, because theorizing and empirical research regarding PAW-NF are still in an early stage, it is appropriate to consider a wide range of possible explanations for this phenomenon.

### **PETS AS PERSONS**

A possible explanation for PAW-NF is that some individuals have come to regard their pets as "persons" who have the same rights and deserve the same consideration as human persons. This "categorical assimilation" explanation has a strong cognitive component: Some forms of PAW-NF may develop because an individual conceptualizes the pet as a "person", or even more specifically as a "family member," "child" or "baby." However, this explanation can also accommodate social psychological, affective, and personality-based components. For example, social or emotional circumstances (e.g., isolation, childlessness, loss of a mate) may lead some individuals to start regarding their pet as a family member. Similarly, some personality traits (e.g., nurturance, sentimentality) may make some individuals more likely to view pets as children or babies.

Some research findings support the idea that pets can be baby- and child-substitutes, or can even become parental figures or partner-substitutes (Albert & Bulcroft, 1987). Some people rate their relationship with pets as similar to those they have with children (Archer, 1997). There are many examples of how people sometimes treat their pets as children, for instance by playing with them (Smith, 1983), talking to them in baby talk (Hirsh-Pasek & Treiman, 1982), referring to them as 'my baby', and holding and cuddling them as a baby (Carmack, 1985; Serpell, 1986). In the case of pets acting as parent figures or partner substitutes, the pet may be seen as a source of security and protection, or of caring and closeness, although empirical evidence regarding this possibility is limited. It has been reported that pets can sometimes serve as a primary source of

emotional support. Consistent with attachment theory (Bowlby, 1969) human adults develop attachment to others to seek closeness and security at times of stress; attaining and maintaining proximity reduces fear and insecurity (Sable, 1995). A study by Kurdek (2009) asked devoted dog owners who they turned to for emotional support during times of distress. On average, the owners reported their dogs to be their second most important source of support -- ranking behind romantic partners, but ahead of other attachment figures such as mothers, fathers, brothers, sisters, best friends, and children.

Strong emotional attachments to a pet may be facilitated by the love and affection dogs show toward their owners. It is very commonly observed in dogs that they pay close attention to their owners and show obvious attachment to them (Smith, 1983). Many pet owners respond positively to their dogs' behavior and derive pleasure from being with them (Serpell, 1986; Serpell, 1996).

In addition, people generally show more liking for dogs, cats and furry mammals than for other animals, because the mammals are pleasant to the touch and warm-blooded like humans. In addition, some dogs share certain facial and bodily features with human babies, and may evoke similar emotional and behavioral responses from their owners. Lorenz (1971) suggested that animals with large foreheads, large and low-lying eyes, chubby cheeks, short and thick limbs, and clumsy movements resemble human babies, causing humans to find such animals appealing and "cute."

In other ways, too, it can be seen that pets often evoke behaviors and responses from their owners that are similar to the behaviors and responses that would normally be directed toward another human being. For instance, although pets lack language and have limited intelligence compared to humans, many pet owners talk to them in ways that only another human could

understand. Furthermore, many owners use a distinctive *type* of language with their pet. The language used with babies and young children has specific characteristics that make it different from the language used with adults. Such language is referred to as "motherese" (Fernald, 1985) and includes features such as short utterances, using imperatives and questions, repetitions, simple sentences, tag questions (Archer, 1997), high pitch, and exaggerated intonation (Fernald & Simon, 1984; Mitchell, 2001). In a study conducted by Hirsh-Pasek and Treiman (1982), it was found that almost all the characteristics of motherese were present in the one-sided conversations that dog owners had with their pet dogs.

"Motherese" is used not only in conversations with young children, but also in interactions with other individuals (e.g., developmentally delayed persons) who are at a different level of understanding compared to human adults (DePaulo & Coleman, 1986). Interestingly, Bombar and Littig (1996) found that there is a connection between using motherese language or babytalk and intimate attachment. Thus, the tendency of some owners to talk to their pets in "motherese" may indicate that a close attachment has already formed. There is even a possibility of a causal effect, with "motherese" actually contributing to the formation of intimacy.

Losing a pet through death can be very stressful, sometimes evoking a bereavement response from the owner that is similar to what would be observed if a family member had died. According to surveys of veterinary practitioners conducted in the U.S., some people said they would prefer to lose their spouse rather than their pet (Carmack, 1985). It has been found that most of the reactions associated with bereavement of a loved one are also present when losing a pet (Archer & Winchester, 1994). In some cases, when losing a pet, the intensity and duration of some pet owners' mourning equals or is even greater to the grief experienced when losing a human companion (Gosse & Barnes, 1994; Planchon & Templer, 1996; Wrobel & Dye, 2003).

## EMOTIONAL DEPRIVATION

Another possible explanation for PAW-NF is that strong attachment towards a pet is a compensation for inadequate emotional relationships with other humans. Research has provided some support for this explanation, but with qualifications. There is no evidence that people with poor capacity for human relationships turn to pets as substitutes (Archer, 1997). However, research suggests that people who desire close relationships but are deprived of them may sometimes turn to pets as a substitute. For example, studies have found that people without children, and those who live alone, are more likely than other individuals to become strongly attached to their pets (Archer, 1997; Albert & Bulcroft, 1987). Furthermore, people who have suffered abuse in their childhood, or some kind of trauma in adulthood, are more likely than other individuals to see pets as a reliable and consistent source of both emotional and physical support in comparison with humans (Sharkin & Bahrnick, 1990).

In general, research indicates that a tendency to form close relationship with a pet is positively correlated with an individual's tendency to form close relationships with other humans. Contrary to the widespread belief that strong attachment to a pet indicates difficulty in forming or sustaining meaningful relationships with other humans, it has been shown that people with secure attachments in their close human relationships are also more likely to form strong attachments to their dogs (Archer, Ireland, Mills, & Parker, n.d.). Additionally, some studies have shown that owning a pet is correlated with better relationships with neighbors and a sense of community (Triebebacher, 1998; Wood, Giles-Corti, Bulsara, & Bosch, 2007). Women generally show stronger attachment to their pets than men do (Archer et al., n.d.), perhaps reflecting broader gender differences in warmth and nurturance (Feingold, 1994; Weitz, 1976).



More generally, it has been found that having contact with an animal during childhood and adolescence is related to having a stable personality in adulthood and developing traits such as warmth, empathy, and compassion in addition to having higher self-esteem and developing autonomy (Ascione & Weber, 1996; Van Houtte & Jarvis, 1995). Moreover, it has been reported that empathy towards animals is associated with a more empathetic attitude towards other humans (Paul, 2000). Also relevant are the findings of Morovati, Steinberg, Taylor, and Lee (2008), who found significant correlations between positive attitudes towards a pet and personality traits such as being orderly, extraverted, emotionally stable, and rebellious.

### **GENERALIZATION OF DISORDERED RELATIONSHIP**

Another possible explanation for PAW-NF is that some individuals who exhibit negative features or patterns in their relationships with other human beings may be prone to replicate these same negative features or patterns in their relationships with their pets. For instance, individuals who are inconsistent in setting boundaries with their children may show the same pattern with their pets. Individuals who have difficulty being appropriately assertive in their work and personal relationships may have the same problem with their pet. Individuals who react defensively to appropriate criticism and ignore feedback may show the same pattern when their pets are criticized.

The idea that a person's relationship problems with people may be reflected in that person's relationship with their pet has received little attention from researchers. However, as noted in the previous section, studies indicate that personality factors that involve interpersonal functioning, such as empathy and attachment, are related to individuals' attitudes toward their pets. Such findings suggest that there are likely to be similarities between the way that individuals relate to other individuals and the way they relate to pets.

Furthermore, there is some support for the view that problematic aspects of owner personality can be associated with problematic behavioral patterns in their dogs. A study by Podberscek and Serpell (1997) found owners of aggressive dogs to be lower in emotional stability, and to be more shy, tense, and undisciplined than owners of non-aggressive dogs. Also, owner neuroticism has been found to be positively correlated with their dogs' negative activities such as: sexual mounting of people or inanimate objects, destructiveness when left alone, biting people, and pestering for attention (O'Farrell, 1997), and with dogs' neuroticism as well (Turcsán, Range, Virányi, Miklósi, & Kubinyi, 2012).

### **Measures of Pet-Owner Relationships**

This thesis project consisted of two studies. The aim of Study 1 was to develop a multi-scale instrument, tentatively named the Assessment of Dog Owners' Behaviors and Experiences (ADOBE), to measure attitudes, cognitions, and behaviors of dog owners in regards to their pet, including both healthy and unhealthy aspects of the owner-dog relationship. After the ADOBE was developed in Study 1, it was used in Study 2 to test several hypotheses based on the theoretical explanations for PAW-NF that have already been described in the Introduction of this thesis.

Throughout the years, several other scales have been developed to assess the relationships of people with their pets. These scales are described in the following paragraphs.

The Pet Attitude Scale (PAS) is a well-known self-report scale developed by Templer, Salter, Dickey, Baldwin, & Veleber (1981) to measure human-animal bonding. The 18 Likert-type items of the PAS assess how much the owner loves and interacts with the pet, views the pet as a family member, and derives happiness from being with the pet. Sample items for the PAS include the following: "I frequently talk with my pet." "I would like a pet in my home." "I really like seeing pets enjoy their food." In a sample of undergraduate students, Templer et al. (1981)

found that the PAS has good internal reliability, with Cronbach's alpha of  $\alpha=.93$ , and good test-retest reliability,  $r = .92$ .

Another scale, the Animal-Human Continuity Scale developed by Templer, Connelly, Bassman, and Hart (2006) is an "animal attitude scale in that it is related to philosophical/religious/worldview assumptions about whether there is a qualitative difference between humans and other animals" (Templer, & Arikawa, 2011). In other words, this scale assesses the extent to which people view humans and animals in a dichotomous way or on a continuum. This self-report scale contains 12 items about rational capacity, superiority vs. equality, and evolutionary continuum measured on a 7-point Likert-type format. Items for this scale include the following: "Humans have a soul but animals do not." "People are superior to animals." "People evolved from lower animals." Internal consistency of this 12-item scale was found to be adequate, with Cronbach's  $\alpha = .69$ , in a study by Templer, Connelly, Bassman, and Hart (2006).

The Companion Animal Bonding Scale (CABS; Poresky, Hendrix, Mosier, & Samuelson, 1987) consists of 8 Likert-type items that focus on the respondent's relationship with a pet during childhood. Items include: "How often did your companion sleep in your room?" "How often did you hold, stroke, or pet your companion animal?" and "How often were you responsible for your companion animal's care?" The scale can be administered in either the present tense (contemporary scale) or the past tense (childhood scale). Poresky et al. reported Cronbach's alpha as  $\alpha= 0.82$  for the contemporary scale and  $\alpha= 0.77$  for the childhood scale. In support of construct validity, these authors reported that the contemporary and childhood scales of the CABS significantly correlated,  $r=.38$  and  $r=.42$ , respectively, with the Pet Attitude Scale (PAS).

The Pet Attitude Inventory (PAI; Wilson, Netting & New, 1987), consists of 36 questions that include the following: demographic information, childhood pet ownership, present pets—their

number, species, name, age, duration of ownership, and from where they were acquired, time and activities spent with the pet, and talking to the pet. The PAI is not designed to be a psychometric instrument but is useful as an information sheet.

The Miller-Rada Commitment to Pets Scale (Staats, Miller, Carnot, Rada, & Turnes, 1996) includes 10 Likert-type items that assess how much trouble or burden an owner is willing to endure on behalf of their pet. Some item examples are as follows: “If an adult dog or cat were having problems with housebreaking, I would get rid of it.” “If a three-month-old puppy or kitten were having problems with destructiveness, I would get rid of it.” “If a young pet required extensive veterinary care, I would get rid of it.” The Miller-Rada Commitment to Pets Scale has high internal consistency, demonstrates construct validity, and correlates with attachment to pets ( $r=.44$ ), as measured by the Pet Relationship scale developed by Kafer et al. (as cited on Staats et al., 1996).

The CENSHARE Pet Attachment Survey (Holcomb, Williams, & Richards, 1985) assesses the elements of pet-owner attachment. This scale consist of 27 items divided into two sub-scales: Intimacy (11 items) and Relationship Maintenance (16 items). The first sub-scale, Intimacy, assesses attitudes surrounding emotional importance, physical proximity, and planning for close physical proximity. Some examples of items are as follows: “You prefer to be with your pet more than with people you know.” “When you feel bad, you seek your pet for comfort.” The second sub-scale, Relationship Maintenance, assesses behaviors broadly related to physical and sensual interaction, communication, time and financial investment. Some examples of items are as follows: “Your pet comes to greet when you arrive.” “You confide in your pet.” “You buy presents for your pet.” Reliability coefficients of  $\alpha = .74$  and  $\alpha = .83$  for the Intimacy and Relationship Maintenance

subscales, respectively, were reported by Holcomb et al. (1985), indicating good reliability for both sub-scales.

Finally, the 28-item Monash Dog Owner Relationship Scale (MDORS) examines both positive and negative aspects of dog ownership (Dwyer, Bennett, & Coleman, 2006). The MDORS has three sub-scales, Dog–Owner Interaction (9 items), Perceived Emotional Closeness (10 items), and Perceived Costs (9 items).

The items in the MDORS Dog–Owner Interaction subscale reflect both general and more intimate activities related to the care of the dog, such as grooming, kissing and hugging the dog. Some item examples are as follows: “How often do you hug your dog?” and “How often do you buy your dog presents?”

The items in the second MDORS subscale, Perceived Emotional Closeness, relate to social support, affectional bonding, psychological attachment, companionship and unconditional love. Some items examples are as follow: “I would like to have my dog near me all the time” and “My dog provides me with constant companionship.”

The third MDORS subscale, Perceived Costs, addresses the costs of caring for a dog that include monetary aspects, increased responsibility, and restrictions placed on the owner because of the dog. Some item examples are: “It bothers me that my dog stops me doing things I enjoyed doing before I owned it” and “There are major aspects of owning a dog I don’t like.”

Dwyer, Bennett, and Coleman (2006) have reported good internal reliabilities, Cronbach’s  $\alpha = 0.84$ , for both the MDORS Perceived Emotional Closeness and Perceived Costs subscales. Reliability for the Dog-Owner Interaction subscale was reported as somewhat lower,  $\alpha = .67$ .

Table 1 lists and provides summary information on the several pet-owner scales that have been described in this section.

Table 1. Summary of the different existing pet scales

<b>Scale</b>	<b>Authors</b>	<b>What it measures</b>
1. Pet Attitude Scale (PAS)	Templer, et al. (1981)	Level of bonding with pet
2. Animal–Human Continuity Scale	Templer et al. (2006)	Perceptions of animals and humans as on a continuum (similar), or as dichotomous (dissimilar).
3. The Companion Animal Bonding Scale	Poresky et al. (1987)	Closeness of relationship with a pet during childhood
4. Pet Attitude Inventory (PAI)	Wilson et al. (1987)	Information regarding childhood & current pet ownership (non-psychometric)
5. The Miller-Rada Commitment to Pets Scale	Staats et al (1996)	Perceived burdens of pet ownership
6. CENSHARE Pet Attachment Survey	Holcomb et al. (1985)	Owner attachment to pet. Sub-scales: 1. Intimacy 2. Relationship maintenance
7. Monash Dog Owner Relationship Scale (MDORS)	Dwyer et al. (2006)	Positive & negative aspects of dog ownership. Sub-scales: 1. Dog–Owner Interaction; 2. Perceived Emotional Closeness; 3. Perceived Costs

### **Limitations of existing scales**

As has been described, there are already several scales that measure human-animal bonding among pet owners. However these measures have two important limitations. First, nearly all focus exclusively on positive aspects of the owner-pet relationship (e.g., bonding), with no attempt to measure negative aspects. Second, these scales are written to assess the relationship of owners with their companion animal without taking into account the species of the animal.

It was anticipated that the ADOBE would have important similarities with some of the scales that have been discussed here, especially the PAS and the MDORS. However, the ADOBE was intended to offer three important advantages over existing scales. First, the ADOBE was intended to focus specifically on owners of dogs and not owners of companion animals in general. There are good reasons to develop a measure that focuses exclusively on dog owners. According to the 2015-2016 American Pet Products Association (APPA) survey, 54.4 million of household own at least a dog as a pet, making dogs the most common pet in the US. In addition, as Siegel (1990) stated, “dogs more than any other pets provided their owners with companionship and an object of attachment.” Furthermore, there is evidence that scales that assess owners' relationship with multiple types of companion animals tend to yield results that are confounded by the species of the animal (Dwyer, Bennett, & Coleman, 2006).

Second, the ADOBE was intended to be multi-dimensional, measuring many different aspects of dog ownership with 5 or more scales. In contrast, existing measures include only one, two or at most three sub-scales. Third, the ADOBE was intended to assess both positive and negative aspects of pet ownership, whereas existing measures generally focus solely or primarily on the positive aspects.

The ADOBE was developed to be more comprehensive than existing measures, making it more useful to researchers. With multiple scales that measure both positive and negative aspects of dog ownership, the ADOBE was intended to provide a broad picture of dog owners' relationships with their pets, and allow researchers to explore many aspects of pet ownership simultaneously.



### **Study 1. Method**

The purpose of Study 1 was to develop a multi-scale questionnaire, the ADOBE-I, that measures both positive and negative features of the dog-owner relationship. Both this Study I and Study 2 were approved by the Institutional Review Board (IRB) at the University of Texas at El Paso.

#### *Participants*

Five hundred and ninety-six participants from Amazon Mechanical Turk (M-Turk) participated in Study 1. Of these 596, 244 were excluded from the data analyses for the following reasons:

(a) Seventy seven cases were excluded due to having a repeated IP address. Some participants with repeated IP addresses were excluded due to the same participant taking the entire survey twice. Other participants with a repeated address did not meet the study's inclusion criteria during their first attempt to sign up, but then made a second attempt, changing their answers so that they appeared to meet the inclusion criteria.

(b) One hundred and thirty-five cases had incomplete answers or were left blank.

(c) A set of six careless-responding questions were included in the ADOBE Prototype in order to screen out data from individuals who responded carelessly on the questionnaire. Examples of the careless items are: “Select ‘Agree’ if you are reading this sentence”, or “If you are paying attention, you will select ‘Strongly disagree.’” For every 50 questions, a carelessness item was included. If a participant missed one or more of the carelessness items, their data were excluded from the analyses. Thirty two cases were excluded for this reason.

Data from the remaining 352 participants were analyzed in Study 1. The mean age of these 352 participants was 36.41 years,  $SD = 12.24$ , with 57.4% being females, and 80.7% self-identified as White Non-Hispanic. Additional demographic information is provided in Table 2.

## *Materials*

The ADOBE Prototype was administered to all participants. It included a pool of 265 items related to dog-owner relationships and the six careless-responding questions. The content of the 265 items reflected 11 proposed constructs related to dog-owners' behaviors and attitudes toward their dog. The items were identified by performing the following steps.

(1) A list of constructs related to positive and negative aspects of dog ownership (e.g., Attention to Basic Needs of Dog; Degree of Bonding With Dog; Negative and Positive Effects on Owner's Relationships With Other People) was generated by reviewing the scientific and scholarly literatures, examining existing questionnaires regarding pet-human relationships, questioning dog owners, and gathering anecdotes from individuals who had observed dog owners.

(2) Items were written for each construct.

(3) New constructs were suggested during the item-writing process in Step (2), bringing the total number of dog-related constructs to 11. New items were written to assess the new constructs.

(4) All items were reviewed to assure that they followed published recommendations for item constructions (McDonald, 2013), such as using simple vocabulary and avoiding double negatives, and were revised accordingly. Items that were deemed redundant or judged to be inappropriate were discarded.

The number of items resulting from this process was 265, as listed in the ADOBE Prototype in Appendix A. The response format for each item was a 5 point Likert-type scale, where '1'= strongly disagree, '3'= neither agree nor disagree, and '5'= strongly agree. The following

paragraphs describe the 11 constructs that the 265 items of the ADOBE Prototype were intended to measure.

**Construct 1. Health.** This category was assessed by items 1 to 27 of the ADOBE Prototype (the item numbers given here ignore the careless-responding items). These items were intended to assess how dedicated the owner is to caring for the health, grooming, and hygiene of his or her dog. Example items: “I brush my dog at least once each week.” “My dog sees the vet at least once each year.”

**Construct 2. Disruption of relationship with others.** This category was assessed by items 28 to 51 of the ADOBE Prototype. These items were intended to assess how the owner's relationship with the dog has affected the owner's relationship with other human-beings. The large majority of these items concerned possible *negative* impacts on human relationships. Example items: “I have had disagreements or misunderstandings with friends or family about my dog.” “I think there's something a little wrong with people who don't like dogs.”

**Construct 3. Bonding.** This category was assessed by items 52 to 105 of the ADOBE Prototype. These items were intended to measure the degree of attachment of the dog owner with his/her dog. Example items: “My dog brightens my day.” “My dog sleeps in my bedroom at night.”

**Construct 4. Harm or threats to others.** This category was assessed by items 106 to 123 of the ADOBE Prototype. These items were intended to measure the degree to which a dog owner recognizes that his/her dog can be a danger to others. Example items: “My dog has threatened some people.” “My dog has never hurt or snarled at a child.”

**Construct 5. Dog as a family member.** This category was assessed by items 124 to 150 of the ADOBE Prototype. These items were intended to measure the degree to which the dog

owner considers the dog to be a member of the family. Example items: “I consider my dog to be almost like my child.” “When I hold my dog, I hold him like a sleeping baby.”

**Construct 6. Destructiveness/burden.** This category was assessed by items 151 to 169 of the ADOBE Prototype. These items were intended to measure if the dog has caused physical damages to owner’s property. Example items: “I often have dog hair on my clothes.” “There is not any dog hair on the furniture in my house.”

**Construct 7. Canine social desirability.** This category was assessed by items 170 to 193 of the ADOBE Prototype. These items were intended to measure if dog owners tend to view their dog in a favorably manner. Example items: “My dog always obeys me promptly.” “My dog is very loyal.”

**Construct 8. Pro-animal.** This category was assessed by items 194 to 215 of the ADOBE Prototype. These items were intended to measure if the owner considers himself/herself an advocate for animal welfare and animal rights. Example items: “If my dog were injured, I would spend as much money as I could to restore him/her to health.” “I have sometimes wished that I could run a shelter for dogs.”

**Construct 9. Difficulty establishing rules.** This category was assessed by items 216 to 233 of the ADOBE Prototype. These items were intended to measure if specific rules have been established for the dog and if the dog follows them. Example items: “My dog has attended different obedience classes taught by different instructors.” “My dog flunked out of dog obedience training.”

**Construct 10. Adaptation.** This category was assessed by items 234 to 246 of the ADOBE Prototype. These items were intended to measure the degree to which the dog owner adapts to the dog’s schedule or needs. Example items: “When I go on a trip, I prefer to take my dog with me.” “I sometimes skip social events so that I can get home and take care of my dog.”

**Construct 11 .Miscellaneous.** This category is assessed by items 247 to 265 of the ADOBE Prototype. These items were intended to measure other attitudes, behaviors or cognitions that have not yet been identified to fit in any of the other categories mentioned above. Example items: “I would like to display my dog in a dog show.” “My dog has lots of toys.”

### *Procedure*

The study was administered online using Amazon Mechanical Turk (M-Turk) and Qualtrics systems, which is an online survey system that allows researchers at the University of Texas at El Paso (UTEP) to create surveys and questionnaires and gather data online. M-Turk is an online system in which researchers can pay small amounts of money for people to complete questionnaires.

At the beginning of the study, each participant was asked questions regarding their age, dog, and place of residence. These questions were designed to determine whether the participant met the inclusion criteria for the study, although the participant was not told that this was the purpose of the questions. Based on the answers to these questions, participants were identified who met the following inclusion criteria (a) 20 years old or older, (b) currently has a dog as a pet, (c) has had the dog for at least two months, (d) identifies him/herself as the dog's primary caretaker, and (e) resides in the United States.

Participants who met these criteria were directed to the informed consent form (Appendix B) and the demographics form (Appendix C). In addition, participants were asked to provide the first letter of their mother's first name, the number of older siblings they have (living and deceased), their month of birth, and the initial of their middle name. If they did not have a middle name, an “X” was used. The purpose of these questions was to create a code for each participant and be able to identify them in the second part of the study.

After filling out the informed consent and the demographics form, participants were given the following instructions before completing the ADOBE Prototype:

When answering the questionnaire, please think of your current dog. If you own more than one dog, then answer the questionnaire for your *favorite* among your current dogs. If you do not have a favorite dog, answer the questions for the current dog you have owned the *longest*. Your answers are confidential, so please answer all of the items as honestly as you can.

After answering the ADOBE Prototype participants were thanked for their participation and invited to share their e-mail address if they wanted to be part of Study 2. The message given to participants read as follows:

The principal investigator is conducting a project that consists of two studies. If you would like to be part of study two and earn \$0.50 more, please write down your e-mail in the box below. Your e-mail will **NOT** be shared with anyone. The only purpose for collecting your e-mail address is for the principal investigator to contact you to notify you that study 2 is available on M-Turk. Again, your-e-mail address will remain confidential and its only purpose is for a follow-up in this research study.

## Study 1. Results

### *Imputation of Missing Values*

The central analyses of Study 1 involved the scores of 352 participants on the 265 items of the ADOBE Prototype. Of the 93,280 item values (352 participants X 265 items), 11 item values were missing (.012% of all values). No variable had more than one missing value. The missing values were computed using the Multiple Imputation procedure of SPSS version 22, with the 265 items of the ADOBE prototype as predictors.

### *Exploratory Factor Analysis of the ADOBE Prototype*

The purpose of Study 1 was to create factor-based scales of the ADOBE 1 by factor analyzing the 265 items of the ADOBE Prototype. The first step of the factor analytic procedure was to estimate the number of factors present in the ADOBE Prototype items. Principal Component Analysis of the data set indicated that the number of eigenvalues greater than 1.0 was 62 (See Table 3). Visual inspection of the scree plot indicated that the eigenvalues of three components were substantially larger than the rest, but there was no clear break or drop-off among the remaining eigenvalues. Finally, the Comparison Data (CD) approach of Ruscio and Roche (2012) was applied. It indicated that seven factors were present in the data. Based on these results, it was tentatively concluded that the number of non-trivial factors was probably 7 and certainly no less than 3. Accordingly, a seven-factor factor analytic solution was calculated using Principal Axis Factor Analysis (PFA) to extract the factors and Promax rotation. The factor pattern for the seven-factor solution is shown in Table 4.

As can be seen in Table 4, the first five factors of the factor pattern each had (a) 5 or more substantial item loadings ( $> .50$ ) in which (b) the content of most items was conceptually similar. In contrast, the last two factors each had (a) fewer than 5 substantial item loadings and (b) the

content of the items was not always conceptually similar. Therefore, the decision was made to form five scales based on the first five factors, but not to form scales based on the last two factors.

The first factor scale, Dog-Owner Bond, included 16 items (see Table 5). It was created by selecting items from the first factor of the factor-analytic solution (a) with loadings of .50 or higher on the first factor and (b) whose content reflected a positive emotional connection with the dog.

The second factor scale, Legal Problems, included 14 items (see Table 5). It was created by selecting items from the second factor of the factor-analytic solution (a) with loadings of .50 or higher on the second factor and (b) whose content reflected either legal problems involving the dog or other characteristics plausibly related to such legal problems.

The third factor scale, Hostile Dog, included 8 items (see Table 5). It was created by selecting items from the third factor of the factor-analytic solution (a) with loadings of .50 or higher on the third factor and (b) whose content reflected the dog's hostile or aggressive attitude towards people.

The fourth factor scale, Obedient Dog, included 7 items (see Table 5). It was created by selecting items from the fourth factor of the factor-analytic solution (a) with loadings of .50 or higher on the fourth factor and (b) whose content reflected a well-disciplined and obedient dog.

The fifth factor scale, Care for Dog's Health, included 7 items (see Table 5). It was created by selecting items from the fifth factor of the factor-analytic solution (a) with loadings of .50 or higher on the fifth factor and (b) whose content reflected the owner's involvement in maintaining the dog's health.

Because there is possible theoretical importance to the phenomenon of people treating their dogs as if they were children, a supplemental sixth scale was also created, called Dog as Child. It included 6 items. It was created by selecting items from the first factor of the factor-analytic



solution (a) with loadings of .50 or higher on the first factor and (b) whose content indicated that the dog owner treated his or her pet as a child or member of their family.

#### *Basic Descriptive Statistics and Internal Reliability of ADOBE-I*

Basic descriptive statistics regarding the ADOBE-I scales in Study I, including mean, standard deviation, minimum and maximum, are reported in Table 6. Internal reliability statistics are also reported in that table. Standards for evaluating the internal reliability of psychological scales, as suggested by Hunsley and Mash (2008), are as follows: coefficient alpha values greater than .90 are considered excellent; values between .80-.89 are considered good; values between .70-.79 are considered adequate; and values below .70 are considered inadequate. As can be seen in Table 6, the internal reliability of the Dog-Owner Bond (.930) and Legal Problems (.929) scales of the ADOBE-I in Sample 1 would be considered excellent according to the Hunsley and Mash (2008) standards. The reliability of the Hostile Dog (.874) and Obedient Dog (.885) factors would be considered good. The reliability of the Care for Dog's Health (.726) and Dog as Child (.744) scales would be considered adequate. However, these figures may over-estimate the internal reliability of the scales, because they were computed using the same Study 1 sample that was used to develop the scales.

## Study 2. Method

The purpose of Study 2 was to (1) assess the internal reliability of the ADOBE-I scales; (2) gather information regarding their concurrent validity by examining their relationship with existing pet-attachment scales and the Big 5 personality factors; (3) examine the test-retest reliability of the ADOBE-I scales, and (4) test the theory-based hypotheses described in the introduction of this thesis.

### *Participants*

One hundred and fifty seven participants from Amazon Mechanical Turk (M-Turk) participated in Study 2. Of these 157, 61 were excluded from the data analyses for the following reasons:

- (a) Fifteen cases were excluded due to having repeated IP addresses.
- (b) Twenty six cases were excluded due to not meeting inclusion criteria or for having blank or incomplete answers.
- (c) As in Study 1, a set of careless-responding question were used to screen out individuals who responded carelessly on the questionnaire. For every 50 questions, a carelessness item was included. A total of four careless items were included in the questionnaire. Fourteen participants were excluded due to missing one or more of these careless-responding questions.
- (d) Six additional participants were excluded because they took less than ten minutes to complete the entire questionnaire, indicating that they might not have been paying attention or reading all questions.

Data from the remaining 96 participants were analyzed in Study 2. The mean age of these 96 participants was 33.91 years,  $SD = 11.88$ , with 64.6% females and 82.3% White Non- Hispanic. Three of these participants were also participants in Study 1. More demographic information can be found in Table 7.

## *Materials*

The following measures were administered to all participants in Study 2: The Assessment of Dog Owners' Behaviors and Experiences, Version I (ADOBE-I), the Pet Attitude Scale (PAS; Templer, Salter, Dickey, Baldwin & Veleber, 1981), the Miller-Rada Commitment to Pets Scale (Staats, Miller, Carnot, Rada, & Turnes, 1996), the Monash Dog Owner Relationship Scale (MDORS; Dwyer, Bennett, & Coleman, 2006), the CENSHARE Pet Attachment Survey (Holcomb, Williams & Richards, 1985), the Big Five Inventory (BFI; John & Srivastava, 1999), and the Revised UCLA Loneliness Scale (RULS; Russell, Peplau & Cutrona, 1980; Russell, 1996).

Some of these measures, such as the RULS, had response options based on a 4-point Likert format. However, in order to avoid confusing participants, all measures were administered using a 5-point Likert format where '1'=disagree strongly, '3'=neither agree nor disagree, and '5'=agree strongly. Each of these measures will be described in the following paragraphs.

**Assessment of Dog Owners' Behaviors and Experiences, Version I (ADOBE-I).** The Assessment of Dog Owners' Behaviors and Experiences, Version I (ADOBE-I), as described in the Results section for Study 1, was administered to all participants. It included six scales and a total of 53 items (See Appendix E).

**The Pet Attitude Scale.** The Pet Attitude Scale (PAS; Templer, Salter, Dickey, Baldwin & Veleber, 1981) is a self-report scale with 18 Likert-type items that assesses bonding between a pet owner and their dog, including love and interaction, viewing the animal as a family member, and mutual happiness. Research indicates that the PAS has good internal reliability ( $\alpha=.93$ ) and test-retest reliability ( $\alpha=.92$ ) (Templer et al., 1981).

**Miller-Rada Commitment to Pets Scale.** The Miller-Rada Commitment to Pets Scale (Staats, Miller, Carnot, Rada, & Turnes, 1996) is a scale that consists of 10-items that assess the

trouble or burden an owner is willing to endure on behalf of their pet. This scale has an internal reliability of  $\alpha=.90$ . No further psychometric properties have been reported.

**Monash Dog Owner Relationship Scale.** The Monash Dog Owner Relationship Scale (MDORS; Dwyer, Bennett, & Coleman, 2006) examines both positive and negative aspects of dog ownership. The MDORS consists of 28-items divided into three sub-scales: Dog–Owner Interaction (9 items), Perceived Emotional Closeness (10 items), and Perceived Costs (9 items). The items in the MDORS Dog–Owner Interaction subscale reflect both general and more intimate activities related to the care of the dog, such as grooming, kissing and hugging the dog. Some item examples are as follows: “How often do you hug your dog?” and “How often do you buy your dog presents?”

The items in the second MDORS subscale, Perceived Emotional Closeness, relate to social support, affectional bonding, psychological attachment, companionship and unconditional love. Some items examples are as follow: “I would like to have my dog near me all the time” and “My dog provides me with constant companionship.”

The third MDORS subscale, Perceived Costs, addresses the costs of caring for a dog that include monetary aspects, increased responsibility, and restrictions placed on the owner because of the dog. Some item examples are: “It bothers me that my dog stops me doing things I enjoyed doing before I owned it” and “There are major aspects of owning a dog I don’t like.”

Dwyer, Bennett, and Coleman (2006) reported good internal reliability, Cronbach’s  $\alpha = 0.84$ , for both the Perceived Emotional Closeness and Perceived Costs subscales. Reliability for the Dog-Owner Interaction subscale was reported as somewhat lower,  $\alpha = .67$ .

**CENSHARE Pet Attachment Survey.** The CENSHARE Pet Attachment Survey (Holcomb, Williams & Richards, 1985) consists of 27 items that measures the degree to which pet

owners are attached to their dogs and cats. The 27 items are divided into two sub-scales: Intimacy (11 items) and Relationship Maintenance (16 items). The first sub-scale, Intimacy, assesses attitudes surrounding emotional importance, physical proximity, and planning for close physical proximity. The second sub-scale, Relationship Maintenance, assesses behaviors broadly related to physical and sensual interaction, communication, time and financial investment on a pet. Reliability coefficients of  $\alpha = .74$  and  $\alpha = .83$  for the Intimacy and Relationship Maintenance subscales were reported.

**The Big Five Inventory.** The Big Five Inventory (BFI; John & Srivastava, 1999) is a self-report questionnaire that consists of 44- items that assess the Big Five personality dimensions: Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. The internal reliability of the BFI scales range from  $\alpha = .75$  to  $\alpha = .90$ .

**Revised UCLA Loneliness Scale.** The Revised UCLA Loneliness Scale (RULS; Russell, Peplau & Cutrona, 1980; Russell, 1996) is a 20-item scale that measures how lonely respondents rate their existence. The RULS has been established as a reliable measure in terms of internal consistency with coefficient alpha ranging from  $\alpha = .89$  to  $\alpha = .94$  and a test re-test reliability of  $\alpha = .73$ . The RULS has also been demonstrated to have convergent validity as indicated by correlations with other loneliness measures such as the NYU Loneliness Scale and the Differential Loneliness Scale. Also, construct validity was demonstrated by correlations with measures of health, social support and well-being (Russell, 1996).

### *Procedure*

The experiment took place online using Amazon Mechanical Turk (M-Turk) and Qualtrics systems. Those participants who shared their e-mail address at the end of Study 1 were contacted a few hours before Study 2 was available online to let them know Study 2 was going to be

launched. As in Study 1, participants needed to meet the following inclusion criteria: (a) 20 years-old or older, (b) currently has a dog as a pet, (c) has had the dog for at least two months, (d) identifies him/herself as the primary caretaker of the dog, and (e) resides in the United States. Participants who met these inclusion criteria were directed to the informed consent (Appendix D) and the demographics form (Appendix B). Participants were also asked to provide the initial of their mother's first name, the number of older siblings they have (living and deceased), their month of birth and the initial of their middle name. If they did not have a middle name, an "X" was used. These questions created a code for each participant so they could be identified if they participated in Study 1. After filling out the informed consent and the demographics form, participants were given the instructions before completing each of the measures used.

## Study 2. Results

### *Imputation of Missing Values*

Missing values in Study 2 were computed with the Multiple Imputation procedure of SPSS version 22. Specifically, (a) One value was missing for the ADOBE-I Dog as a Child scale, and all ADOBE-I scales items were used to calculate this missing value; (b) One value was missing for the Revised UCLA Loneliness Scale, and all items of the UCLA Loneliness Scale were used to calculate this missing value; (c) One value was missing for the Intimacy scale of the CENSHARE Pet Attachment Survey, and all items of the CENSHARE were used to calculate this missing value; and (d) Three values were missing for the Monash Dog Owner Relationship Scale (MDORS), and all items from the MDORS scale were used to calculate these missing values.

### *Descriptive Statistics, Internal Reliability and Concurrent Validity of ADOBE-I Scales*

Basic descriptive statistics and internal reliability coefficients for the ADOBE-I scales and all concurrent validity scales in Study 2 are reported in Table 8. Scale scores for these and all scales in this thesis were calculated as the average item score for all items in the scale. The intercorrelations of the ADOBE-I scales are reported in Table 9.

Based on the Hunsley and Mash (2008) criteria described above for evaluating internal reliability, the reliabilities of the ADOBE-I scales (coefficient  $\alpha$ ) ranged from adequate to excellent, with one exception: (a) The Dog-Owner Bond scale ( $\alpha = .939$ ) and Legal Problems scale ( $\alpha = .932$ ) had excellent internal reliability; (b) the Obedient Dog scale ( $\alpha = .836$ ) had good internal reliability; (c) the Hostile Dog scale ( $\alpha = .792$ ) and Dog as Child scale ( $\alpha = .744$ ) had adequate reliability, and (d) the ADOBE-I Health scale ( $\alpha = .598$ ) had less than adequate reliability.

The internal reliability of the concurrent validity scales is shown in Table 8. As can be seen, the reliabilities of all scales were adequate or better: (a) The Pet Attitude Scale ( $\alpha = .910$ ) and the Miller-Rada Commitment to Pets Scale ( $\alpha = .938$ ) had excellent internal reliability; (b)

the CENSHARE-Maintenance Scale ( $\alpha = .864$ ), the MDORS-Perceived Costs scale ( $\alpha = .866$ ), and the MDORS-Perceived emotional closeness ( $\alpha = .884$ ) had good internal reliability; (c) the CENSHARE-Intimacy Scale ( $\alpha = .774$ ) and the MDORS-Dog Owner Interaction, ( $\alpha = .703$ ) had adequate internal reliability.

*Concurrent validity of ADOBE-I scales*

Correlations of the ADOBE-I Scales with the previously published pet scales used during Study 2 are reported in Table 10. As can be seen, the concurrent validity of the ADOBE-I Dog-Owner Bond and Legal Problems scales was strongly supported. Specifically, (a) the Dog-Owner Bond scale showed substantial positive correlations with the PAS ( $r = .637$ ), both scales of the CENSHARE, Maintenance ( $r = .642$ ) and Intimacy ( $r = .765$ ), as well as with MDORS Perceived Emotional closeness scale ( $r = .678$ ), and MDORS Dog Owner Interaction ( $r = .379$ ), whereas (b) the Legal Problems scale was strongly correlated with the Miller-Rada Commitment to Pets Scale ( $r = .630$ ) and moderately correlated with the MDORS-Perceived Costs scale ( $r = .464$ ).

Also relevant to concurrent validity, (a) the ADOBE-I Hostile Dog scale was significantly positively correlated with the MDORS Perceived Costs scale ( $r = .386$ ) and the Miller-Rada Commitment to Pet Scale ( $r = .332$ ), and negatively correlated with Pet Attitude Scale ( $r = -.269$ ), and (b) the ADOBE-I Obedient Dog scale was significantly and positively correlated with the CENSHARE-Maintenance Scale ( $r = .419$ ), and negatively correlated with the MDORS Perceived Costs scale ( $r = -.429$ ).

The fifth ADOBE-I scale, Care for Dog's Health, was positively and strongly correlated with the CENSHARE- Maintenance scale ( $r = .501$ ), and the CENSHARE- Intimacy Scale ( $r = .317$ ).



Lastly, the ADOBE-I supplemental scale, Dog as a Child, was positively and significantly correlated with the PAS ( $r = .587$ ), the CENSHARE-Maintenance ( $r = .541$ ) and Intimacy ( $r = .591$ ) scales; and the MDORS-Perceived Emotional Closeness ( $r = .477$ ) and Dog Owner Interaction ( $r = .460$ ) scales.

#### *Test-retest reliability*

One of the purposes of Study 2 was to examine test-retest reliability of the ADOBE-I scales by comparing participants' scores in Study 1 and Study 2. However, as explained in the Methods section, only three participants participated in both studies. For this reason, it was not possible to calculate test-retest reliability.

#### *Analyses Regarding Study 2 Hypotheses*

**Hypothesis 1.** It was hypothesized that length of dog ownership would be correlated with the owner's degree of bonding with the dog. Therefore, those who have been dog owners for a longer time would report higher scores on the ADOBE-I scales that measure bonding, more specifically, Dog Owner Bond and Dog as Child. In addition, it was hypothesized that time of dog ownership would correlated with existing scales that measure these constructs, such as the Pet Attitude Scale and the Intimacy and Relationship Maintenance subscales of the CENSHARE.

Correlations summarized in Table 11 show that these hypotheses were not supported: Time of dog ownership, measured in months, did not significantly correlate with either the ADOBE Dog-Owner Bond scale ( $r = .158$ ) or the ADOBE Dog as Child scale ( $r = .034$ ). Similarly, time of dog ownership was not significantly correlated with the PAS ( $r = .170$ ), the CENSHARE-Maintenance scale ( $r = .086$ ), or the CENSHARE-Intimacy scale ( $r = .130$ ).

These results indicate that time of dog ownership has little or no relationship to attachment. However, a scatterplot of the relationship of the ADOBE-I Dog-Owner Bond scale and time of

dog ownership showed a slight increase in attachment during the first four years of dog ownership, with attachment remaining stable thereafter (See Figure 1).

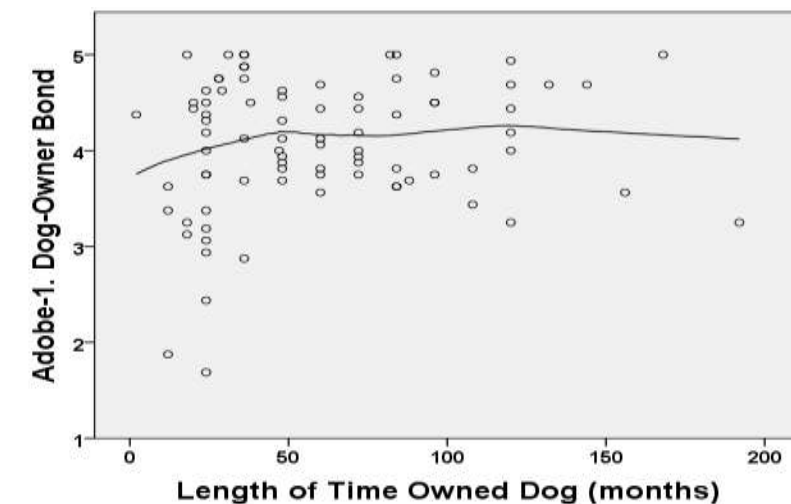


Figure 1: Relationship of length of dog ownership in months and ADOBE-I Dog-Owner Bond

**Hypothesis 2.** It was expected that an ADOBE-I scale would emerge from Study 1 that measures the level of attachment between owners and their dogs. In fact, two ADOBE I scales reflected this construct: The ADOBE-I Dog-Owner Bond scale and the ADOBE-I Dog as Child Scale. It was hypothesized that scores on these attachment scales would have only a low correlation (absolute value of  $r \leq .10$ ) with feelings of loneliness as measured by the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980).

As predicted, the Dog-Owner Bond scale was found to be only weakly correlated with feeling of loneliness as measured by the UCLA Loneliness Scale ( $r = .013$ ). In addition, the Dog as Child scale was found to have only a weak correlation with the UCLA Loneliness Scale ( $r = -.062$ ). Table 12 summarizes the correlations of the UCLA Loneliness scale and all of the ADOBE-

I scales. As can be seen, the Loneliness scale showed significant but unpredicted correlations with two ADOBE-I scales: Obedient Dog ( $r = -.461$ ) and Care for Dog's Health ( $r = -.307$ )

**Hypothesis 3.** It was hypothesized that (a) dog owners' scores on the Extraversion, Agreeableness and Openness scales of the Big Five Inventory (John & Srivastava, 1999) would be negatively correlated with an ADOBE-I scale reflecting "Disruption of relationship with others" scale as well as with an ADOBE-I scale reflecting "Difficulty establishing rules"; and (b) a scale of the ADOBE-I related to taking care of dog's health would be positively correlated with the Big Five personality trait of conscientiousness.

Three ADOBE-I scales emerged that had content related to difficulty establishing rules and disruption of social relationships: the ADOBE-I Obedient Dog, Hostile Dog, and Legal Problems scales. The Obedient Dog scale measures behaviors indicative of a well-disciplined and obedient dog, the Hostile Dog scale measures the dog's aggressiveness and hostile attitude towards other people, and the Legal Problems scale measures legal problems related to the dog.

Table 13 presents the correlations of all ADOBE-I Scales with the BFI. As predicted, the ADOBE-I Obedient Dog scale significantly and positively correlated with Conscientiousness ( $r = .310$ ), Extraversion ( $r = .410$ ) and Agreeableness ( $r = .283$ ); and negatively correlated with Neuroticism ( $r = -.384$ ). Also as predicted, the ADOBE-I Legal Problems scale was negatively and significantly correlated with BFI Agreeableness ( $r = -.217$ ) and Openness ( $r = -.283$ ), but contrary to prediction it was not significantly correlated with BFI Extraversion ( $r = -.009$ ). As predicted, Hostile Dog was significantly and negatively correlated with Openness ( $r = -.217$ ), but contrary to prediction it was not significantly correlated with Extraversion ( $r = -.091$ ) or Agreeableness ( $r = -.139$ ).

One ADOBE-I scale, Care for Dog's Health, emerged as an indicator the owner's attention to the dog's health. As predicted, a significant positive correlation was observed between this scale and BFI Conscientiousness ( $r = .207$ ).

#### *Additional Findings*

Additional interesting correlations of the ADOBE-I Obedient Dog scale with the Big 5 were observed. Although these correlations were not hypothesized and therefore must be regarded as tentative, they are reported here so that future studies can examine them. First, the Obedient Dog scale was found to be positively correlated with Conscientiousness ( $r = .310$ ), a possible indication that organized and dedicated dog owners spend time training their dogs. Second, the Obedient Dog scale was significantly correlated with Extraversion ( $r = .410$ ) indicating that these dog owners may be assertive with their dogs. Third, this ADOBE-I scale was found to be significantly correlated with Agreeableness ( $r = .283$ ), indicating that kind and sympathetic dog owners might be more involved with their dog's training. Fourth, the Obedient Dog scale was negatively correlated with Neuroticism ( $r = -.384$ ), suggesting that some people might not be very involved in training their dog due to their propensity of getting easily frustrated and anxious.

### **Study 3. Method**

The purpose of Study 3 was to determine whether new ADOBE scales should be developed to provide a more detailed picture of dog owners' legal problems. In Study 1, a clear Legal Problems factor emerged and the ADOBE-I Legal Problems scale was constructed from it. However, the items that loaded on this factor, including the items of the Legal Problems scale, were found to have diverse content. Some of these items indicated that legal authorities had contacted the owner regarding the dog, other items indicated that the owner may have neglected the dog, and other items indicated that the dog had caused injuries to people.

At the defense of this thesis, a committee member (D. Jones) suggested that these different item groups might reflect different facets of the Legal Problems factor. He recommended that the items loading on this factor be re-examined to identify possible facets and develop new scales.

In response to this recommendation, in Study 3 a retrospective factor analysis was conducted of the Study 1 data using only items with substantial loadings on the Legal Problems factor. New scales were then constructed based on the results, and a new version of the ADOBE, called the ADOBE-2, was developed. This section describes the retrospective factor analysis and development of new scales. All analyses in Study 3 were conducted following the presentation of the thesis and following data collection for Study 2.

#### *Participants*

All participants in Study 1 (N =352) were included in the retrospective analysis for Study 3.

### *Materials*

The variables included were all ADOBE Prototype items with substantial loadings ( $>.50$ ) on the Legal Problems factor in the EFA already reported for Study 1. Comparison Data analysis indicated the presence of four factors in this set of items. EFA was therefore used to extract four factors, with Promax rotation.

### Study 3. Results

Four factors emerged from the EFA in Study 3: Involvement with Legal Authorities, Injuries Caused by Dog, Display of Dog, and Complaints Regarding Dog. The first three factors (Involvement with Legal Authorities, Injuries Caused by Dog, Display of Dog) were used to construct three new factor scales, as will be described. The fourth factor, Complaints Regarding Dog, consisted of items indicating that other people had complained about the dog drooling on them or the odor caused by the dog. This factor was deemed to be of only minor interest and therefore was not used to create a scale.

#### *New Scales Relevant to Legal Problems.*

The new scales developed on the basis of the EFA are shown in Table 14. The first scale, Involvement with Legal Authorities, indicates that the dog owner has been contacted by Legal authorities regarding problems with the dog. This scale includes three items (Example: "Authorities such as police or animal control officers have sometimes contacted me about my dog"). This scale was found to have an internal reliability (coefficient alpha) of .891 in the Study 1 data. Its mean in the Study 1 dataset was 1.43, with a standard deviation of .741.

The second new scale, Injuries Caused by Dog, indicates that the dog has injured other people or its owner. This scale includes four items (Example: "My dog has hurt some people"). This scale was found to have an internal reliability of .862 in the Study 1 data. Its mean in the Study 1 dataset was 1.49, with a standard deviation of .755.

The third new scale, Display of Dog, indicates that the owner has entered their pet in dog shows and engaged in other behaviors to publicly display the dog. This scale includes five items (Example: "My car has dog bumper stickers"). It was found to have an internal reliability of .809 in the Study 1 data. Its mean in the Study 1 dataset was 1.74, with a standard deviation of .731. The content of the Display of Dog items does not appear to be conceptually connected to legal

problems. However, because a clear factor emerged from the EFA in Study 3 and the underlying construct was deemed to be of potential interest, the Display of Dog scale was created for possible use by future researchers.

None of the three new factor scales developed in Study 3 explicitly refers to neglect of the dog, even though neglect can be an important reason that a dog owner is referred to legal authorities. Therefore, the rational method of scale construction was used to develop a scale reflecting possible neglect. Six ADOBE Prototype items in Study 1 were identified whose content reflected possible neglect of the dog. A one-factor EFA indicated that four of these items loaded substantially on a single factor. These four items were then used to construct a fourth new scale, Suspected Neglect (Example: "Some people think I do not take good care of my dog(s)"). The Suspected Neglect scale indicates that the owner has been suspected of neglecting the dog or has had problems caring for the dog's basic physical needs. This scale was found to have an internal reliability of .815 in the Study 1 dataset. Its mean was 1.52, with a standard deviation of .667. The items of the Suspected Neglect scale appear in Table 14.

*Correlations of the New Scales With Each Other and With ADOBE-I scales in the Study 1 Dataset.*

The correlations among the new scales (Involvement with Legal Authorities, Injuries Caused by Dog, Suspected Neglect, Display of Dog) in the Study 1 dataset are shown in Table 15. As can be seen, all correlations were substantial (.554 to .827).

The correlations of the new scales with the six scales of the ADOBE-I are shown in Table 16. As expected, all the new scales correlated substantially ( $r > .70$ ) with the ADOBE-I Legal Problems scale. In addition, the ADOBE-I Hostile Dog scale correlated substantially ( $r = .522$ ) with the new Injuries Caused by Dog Scale, and showed moderate correlations ( $r > .30$ ) with the



new Contact with Authorities Scale and Suspected Neglect Scale. All other correlations in Table 16 were small or very small ( $r < .30$ ).

*Psychometric Properties of the New Scales in the Study 2 Sample*

In Study 2, the ADOBE-I was administered to 96 participants. Because the ADOBE-I contains all items of the new Involvement with Legal Authorities scale and the new Suspected Abuse scale, it was possible to calculate scores for these two scales in the Study 2 sample. Furthermore, because the ADOBE-I contains two items from the new Injuries Caused by Dog scale, it was possible to calculate scores for a brief version of this scale in the Study 2 sample. The ADOBE-I does not contain any items from the Display of Dog scale, so it was not possible to calculate scores for this scale in the Study 2 sample.

In the Study 2 sample, the new Legal Authorities scale was found to have internal reliability (coefficient alpha) of .897, which would be considered very good. The scale's mean was 1.38 and its standard deviation .81. The new Suspected Abuse scale was found to have internal reliability of .854, which would be considered good. Its mean was 1.45 and its standard deviation .70. The brief version of the Injuries Caused by Dog scale was found to have internal reliability of .765, which would be considered adequate. This reliability figure, based on only two items of the scale, probably underestimates the reliability of the full four-item scale. The mean of this brief version was 1.31 and its standard deviation .81.

Correlations of the three new scales with the ADOBE-1 scales in the Study 2 sample are shown in Table 17. As can be seen, the ADOBE-1 Legal Problems scale correlated .901 with the Involvement with Authorities scale, .947 with the Suspected Neglect scale, and .763 with the Injuries Caused by Dog scale. In addition, all three of the new scales showed moderate correlations (.324 to .422) with the Hostile Dog scale.

Regarding concurrent validity, Table 18 presents the correlations of the new scales, and the ADOBE-I Legal Problems scale, with other measures of dog-owner interactions in the Study 2 sample. The Legal Problems scale was included in this analysis to allow comparisons of this scale's concurrent validity with the concurrent validity of the new scales. Of particular interest in Table 18 are the correlations of the new scales and the Legal Problems scale with the Miller-Rada Commitment to Pet scale and the MDORS-Perceived Costs scale, which both assess the burden, sacrifices and problems of pet ownership. As can be seen, the new scales correlated with the Miller-Rada and MDORS-Perceived Costs scales at about the same level, or at only a slightly lower level, than the Legal Problems scale. These correlations support the concurrent validity of the new scales and suggest that they could replace the Legal Problems scale without sacrificing validity.

#### *Development of the ADOBE-2*

The analyses of the new scales in Study 3—Involvement with Legal Authorities, Injuries Caused by Dog, and Suspected Abuse – indicated that they had good internal reliability and construct validity and could appropriately replace the ADOBE-I Legal Problems scale. Therefore, the decision was made to create a new version of the ADOBE, called the ADOBE-2, which incorporates these three new scales and the new Display of Dog scale. The ADOBE-2 is presented in Table 19. It has much in common with the ADOBE-I, but with some differences: (1) The following scales are included in both the ADOBE-I and ADOBE-2, with exactly the same items: Dog-Owner Bond, Hostile Dog, Obedient Dog, Care for Dog's Health, and Dog as Child; (2) The Legal Problems scale is included in the ADOBE-I but not the ADOBE-2; (3) The Involvement with Legal Authorities scale, Injuries Caused by Dog scale, and Suspected Abuse scale are included in the ADOBE-2 but not the ADOBE-I, thus replacing the Legal Problems scale; (4) the Display of Dog scale is included in the ADOBE-2 but not the ADOBE-I.

We recommend that future researchers use the ADOBE-2 rather than the ADOBE-I, because the new scales of the ADOBE-2 distinguish between the different kinds of problems a dog owner may face – possible neglect of the dog, injuries caused by the dog, and involvement with legal authorities – whereas the Legal Problems scale of the ADOBE-I groups together all these kinds of problems as a single construct. As the Study 3 results indicate, neglect, injuries by a dog, and legal problems tend to be correlated with each other. However, they do not always occur together. Therefore it will be useful to distinguish among these problems in future research by using the ADOBE-2.

## Discussion

This Discussion will begin by describing the development of the ADOBE-I scales and their psychometric properties. It will then review the theory-based hypotheses tested in this thesis and their corresponding findings. Finally, it will discuss directions for future research and the limitations of the present study.

Because the ADOBE-2 was not developed until the final stages of this thesis, much of the Discussion will focus on the ADOBE-I. However, the ADOBE-2 will be discussed where appropriate. Furthermore, because most ADOBE-2 scales are identical to the corresponding ADOBE-I scales, the conclusions regarding most ADOBE-I scales also apply to the ADOBE-2

### *Development of the ADOBE-I Scales and Their Psychometric Properties*

The main aim of this study was the creation of a multi-scale instrument, the ADOBE-I, to measure both positive and negative aspects of the dog-owner relationship. In Study 1, exploratory factor analysis was used to develop five primary ADOBE-I scales (Dog-Owner Bond, Legal Problems, Hostile Dog, Obedient Dog, and Care for Dog's Health) and one supplemental scale (Dog as Child). Psychometric properties of these six scales were examined in Study 2. Internal reliability was assessed, and the scales' concurrent validity was studied by examining their correlations with other existing pet scales. Each of the ADOBE-I scales and its psychometric properties will be discussed individually in the sections below.

**Scale 1: Dog-Owner Bond.** This scale consists of 16 items, including items 1 through 16 of the ADOBE-I and items 1 to 16 of the ADOBE-2 (a copy of the ADOBE-I can be found in Appendix E and a copy of the ADOBE-2 in Appendix F). The scale measures a positive emotional connection of the owner with the dog. Examples of some items are: 'My life feels fuller because I have a dog' and 'I try to spend as much time with my dog as possible.' The scale's replicated

internal reliability in Study 2 as measured by coefficient alpha was found to be .939, which is considered to be excellent according to standards proposed by Hunsley and Mash (2008).

The concurrent validity of the ADOBE-I Dog-Owner Bond scale was examined by computing its correlation with the PAS, the CENSHARE-Intimacy scale, the CENSHARE-Maintenance scale, and the MDORS. All correlations were found to be substantial, providing strong support for the concurrent validity of the Dog-Owner Bond Scale. Specifically, the ADOBE-I Dog-Owner Bond scale correlated (a) .637 with the PAS, which assesses bonding between a pet owner and their dog, (b) .765 with the CENSHARE-Intimacy scale, which assesses attitudes surrounding emotional importance and physical proximity of the dog to the owner; (c) .642 with the CENSHARE- Maintenance scale, which assesses behaviors related to physical and sensual interaction, communication and investment in a pet, (d) .378 with the MDORS- Dog-Owner Interaction, which assesses, general and intimate activities related to the care of the dog, and (e) .678 with the MDORS-Perceived Emotional Closeness scale, whose items relate to affectional bonding, psychological attachment, companionship and unconditional love between the owner and pet (see Table 10).

Additionally, the ADOBE-I Dog-Owner Bond scale was found to be moderately correlated with the Big 5 personality traits of Openness ( $r = .280$ ) and Agreeableness ( $r = .314$ ). These finding suggest that dog owners with these personality traits are more likely to have a good relationship with their dog. As will be described later in this Discussion, these findings are consistent with those of prior research.

**Scale 2: Legal Problems.** This scale consists of 14 items, including items 17 through 30 of the ADOBE-I. As will be discussed, in the ADOBE-2 this scale has been replaced by three shorter scales: the Involvement with Authorities scale (items 17 through 19 of the ADOBE-2), the

Injuries by Dog scale (items 20 through 23 of the ADOBE-2), and the Suspected Neglect scale (items 24 through 27 of the ADOBE-2).

The items of the ADOBE-I Legal Problems scale reflect legal problems experienced by the owner due to the dog. Examples of some items of this scale are: 'My neighbors have complained about my dog' and 'My dog has injured at least one other person, but I don't think it was my dog's fault.' The scale's internal reliability as measured by coefficient alpha was found to be .932, which is considered to be excellent.

The concurrent validity of the ADOBE-I Legal Problems scale was examined by computing its correlations with the Miller-Rada Commitment to Pet Scale and the MDORS-Perceived costs scale, which both assess the burden, sacrifices and problems of pet ownership. The Legal Problems scale was found to correlate (a) .630 with the Miller-Rada scale, which assesses the trouble or burden an owner is willing to endure on behalf of their pet, and (b) .464 with the MDORS-Perceived Costs scale, which assesses the costs of caring for a dog. These correlations provided good support for the concurrent validity of the Legal Problems scale.

The correlation of ADOBE-I Legal Problems Scale with the ADOBE-I Hostile Dog Scale was found to be .428, indicating that having an aggressive dog leads to experiencing legal problems. Figure 2 on the next page shows the two scales' relationship. The graph shows that the likelihood of legal problems increases as the dog's score on the Hostile Dog scale increases. However, the graph also shows that legal problems are less likely for dogs with very high scores on the Hostile Dog scale than for dogs with only moderately high scores. It is surprising that the dogs very high in hostility were reported to have fewer legal problems than the dogs that were moderately high. A possible explanation could be that dog owners with the most hostile dogs under-reported the legal problems involving their pet due to embarrassment.

The Legal Problems scale consists of several different kinds of items that reflect different kinds of legal problems. Some items explicitly refer to problems with legal authorities, for example: “Authorities such as police or animal control officers have sometimes contacted me about my dog” or “My dog has been in trouble with the law” (3 items in total). Other items refer to the dog injuring people (2 items), for example: “My dog has injured at least one other person, but I don't think it was my dog's fault” and “My dog has bitten me badly, but I know he did not mean to.” Some items indicate poor or neglectful care for the dog (4 items), for example: “Some people think I do not take good care of my dog” and “My dog sometimes goes without meals because I am unable to feed him.” Finally, at least one item seems to describe “dog hoarding,” for example: “I recognize I have too many dogs.” Taken together, these groups of items suggest three main reasons why an owner may have legal problems related to their dog: the owner has neglected the dog, the dog attacks people, or the owner has more dogs than he or she is able to take care of.

At the defense meeting for this thesis, a committee member (D. Jones) suggested that these groups of items might reflect different facets of the Legal Problems construct, and that additional analyses might be useful. Accordingly, the analyses reported in Study 3 were undertaken and four new scales were developed that are all closely related to the ADOBE-1 Legal Problems scale: the Involvement with Authorities scale, the Injuries Caused by Dog scale, the Suspected Abuse scale, and the Display of Dog scale.

As reported in Study 3, the first three of these new scales –the Contact with Authorities, Injuries Caused by Dog, and Suspected Abuse scales – have good cross-validated internal reliability, are highly correlated with the ADOBE-I Legal Problems scale, and incorporate many of its items. Furthermore, the concurrent validity of these three new scales is very similar to that

of the ADOBE-I Legal Problems scale. For this reason, a new version of the ADOBE, the ADOBE-2, has been created that replaces the Legal Problems scale with the three new scales: Contact with Authorities, Injuries Caused by Dog and Suspected Abuse. The ADOBE-2 is provided in Appendix F of this thesis. It is recommended that future researchers use the ADOBE-2 rather than the ADOBE-I.

The Display of Dog scale is much different from the other three new scales that emerged in Study 3. The items of this scale do not refer to dog misbehavior, abuse or neglect of the dog, or any type of legal problems. Instead, most of the items indicate that the dog owner likes to show off the dog (entering the dog in shows, having a dog bumper sticker, dressing the dog up in different outfits, taking the dog out in a stroller or buggy) or that the owner takes an unusually strong interest in the dog (buying steak for the dog, subscribing to a magazine on dogs).

The items of the Display of Dog scale emerged as a well-defined and distinct factor in the EFA in Study 3. Furthermore, Study 3 found that scores on this scale had a paradoxically high correlation with the Contact with Authorities and Suspect Abuse scales. This finding is very interesting, if it can be replicated in future studies. The Display of Dog scale is included in the ADOBE-2 in Appendix F for use in future researcher. However, users of the scale should bear in mind that only limited information is currently available regarding its internal reliability and validity.



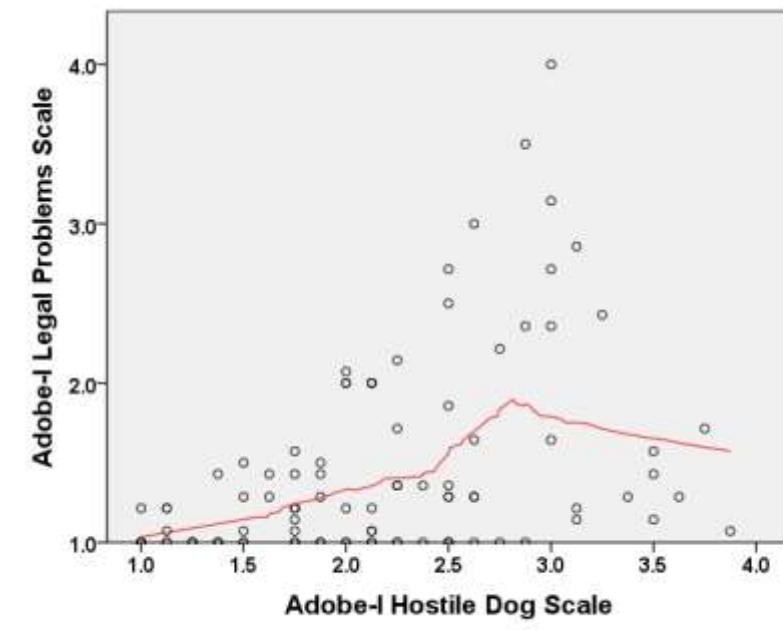


Figure 2: Correlation between Legal Problems Scale and Hostile Dog Scale in Study 2

**Scale 3: Hostile Dog.** This scale consists of 8 items including items 31 through 38 of the ADOBE-I and items 28 through 35 of the ADOBE-2. The items of this scale reflect the dog's aggressive and hostile attitude towards people. Examples of some items of this scale are: 'My dog can sometimes act pretty mean' and 'My dog has threatened some people.' The scale's internal as measured by coefficient alpha in Study 2 was found to be .792, which is considered to be adequate.

None of the concurrent validity scales in the study were designed to assess the pet's level of hostility. However, the Hostile Dog scale was found to significantly and positively correlate with the Miller-Rada Commitment to Pet scale ( $r = .332$ ) and the MDORS Perceived Costs scale ( $r = .386$ ), which both assess the burden, sacrifices and problems of pet ownership.

In addition, significant negative correlations, ranging from modest to moderate in size, were observed with the following measures of dog-owner bonding: (a)  $-.248$  with the CENSHARE-Maintenance scale, (b)  $-.269$  with the PAS, (c)  $-.299$  with the CENSHARE-Intimacy scale, and (d)  $-.240$  with the MDORS-Perceived Emotional Closeness scale. Somewhat

surprisingly given this pattern of findings, the correlation of the Hostile Dog scale with the ADOBE-I Dog-Owner Bond scale was small and non-significant,  $r = -.156$ . Overall, these negative correlations may indicate that it is difficult for an owner to bond to an aggressive dog. Alternatively, there is a possibility that aggressive dogs express fewer bonding behaviors toward their owners, or that owners who are uninterested in bonding to their pet are more likely to encourage aggressive behaviors.

In addition, the Hostile Dog scale was found to be negatively correlated with the personality traits of Openness, Conscientiousness and Extraversion; a finding consistent with the findings of Podberscek and Serpell (1997) that aggressive dog owners tend to be lower in emotional stability, and more shy, tense, and undisciplined than owners of non-aggressive dogs. These findings suggest that that owner characteristics may contribute to dog hostility and a lowered level of bonding.

**Scale 4: Obedient Dog.** This scale consists of 7 items including items 39 through 45 of the ADOBE-I and items 36 through 42 of the ADOBE-2. The items of this scale relate to behaviors of a well-disciplined and obedient dog. Examples of some items of this scale are: ‘My dog is very well behaved’ and ‘My dog always obeys me promptly.’ The scale’s internal reliability as measured by coefficient alpha was found to be .836, which is considered to be good.

Like the ADOBE-I Legal Problems scale and the ADOBE-2 scales that have replaced it, the Obedient Dog scale was moderately correlated with the MDORS-Perceived Costs scale ( $r = -.429$ ), a measure of the burden of dog ownership. However, whereas high scores on the Legal Problems scale were associated with greater burden, high scores on the Obedient Dog scale were associated with less burden. Similarly, the Obedient Dog scale showed a moderate and positive correlation ( $r = .419$ ) with the CENSHARE-Maintenance scale, a measure of dog-owner bonding,

whereas the Legal Problems scale showed a moderate and negative correlation with the CENSHARE-Maintenance scale. Importantly, the ADOBE-I Hostile Dog scale was negatively correlated with the Big Five factor of Neuroticism,  $r = -.384$ . This finding was consistent with previous research reported by Podberscek and Serpell (1997) that found that owner's neuroticism was positively correlated with their dogs' negative activities such as destructiveness.

**Scale 5: Care for Dog' Health.** This scale consists of 7 items including items 46 through 52 of the ADOBE-I and items 43 through 49 of the ADOBE-2. The items of this scale reflect the owner's involvement in maintaining dog's health. Examples of some items of this scale are: 'I take great care of my dog's health' and 'I carefully keep up the vaccinations for my dog.' The scale's internal reliability as measured by coefficient alpha was found to be .598, which is considered to be less than adequate. Further revision of this scale may be desirable to improve its reliability.

Despite the relatively low internal reliability of the Care for Dog Health scale, it showed moderate to large correlations with some other scales in the present study. It correlated (a) .501 with the CENSHARE-Maintenance scale, a measure of time investment and interaction with the dog, (b) .317 with the CENSHARE-Intimacy scale, (c) .314 with the MDORS Dog Owner Interaction Scale and (d) .413 with the Obedient Dog scale.

The correlation of the Care for Dog's Health scale with the Obedient Dog Scale may in part be due to the underlying influence of conscientiousness. Specifically, the Big 5 Conscientiousness scale correlated .207 with the Care for Dog's Health scale, and .310 with the Obedient Dog scale. Both of these correlations suggest that conscientious owners are interested and invested in both maintaining their dogs' health as well as training and educating the dog.

The correlation of the Care for Dog's Health with the Dog-Owner Bond Scale (.304) suggests that taking care of the dog's health and making sure the dog is healthy are signs of

emotional involvement with the dog and that the owner is generally interested in the dog's well-being. When the owner is involved in having a healthy dog, it provides the opportunity for spending more time with the dog.

**Supplemental Scale: Dog as Child.** This scale consists of 6 items including items 53 through 58 of the ADOBE-I and items 50 through 55 of the ADOBE-2. The items of this scale reflect whether the dog owner treats his or her pet as a child or family member. Examples of some items of this scale are: 'When I hold my dog, I hold him like a sleeping baby' and 'I consider my dog to be almost like a member of my family.' The scale's internal reliability as measured by coefficient alpha was .744, which is considered to be adequate.

The ADOBE Dog as Child scale was found to be highly correlated ( $r = .539$ ) with the ADOBE Dog-Owner Bond scale in Study 2. This finding was expected, since both scales were formed from items loading on the first factor of the exploratory factor analysis in Study 1. For the same reason, both scales tended to show a similar pattern of correlations with other dog-related measures in the study, although the correlations for the Dog as Child scale were generally smaller than those for the Dog-Owner Bond scale. Specifically, the Dog as Child scale correlated .587 with the PAS, .541 with the CENSHARE, Maintenance scale, .591 with the CENSHARE Intimacy scale, .460 with the MDORS- Dog Owner Interaction, and .477 with the MDOR-Perceived Emotional Closeness scale.

Although tapping into the same construct as the Dog-Owner Bond scale, the Dog as Child scale has been retained in the ADOBE-I and ADOBE-2 as a supplemental scale because of researchers' interest in the phenomenon of dogs sometimes being treated as children or family members (Cohen, 2002). The study did not examine the question of whether dogs sometimes act as baby- or child-substitutes. However, consistent with prior research (Albert & Bulcroft, 1987),

item responses in the present study indicated that (a) many dog owners reported being referred to as their dog's "mommy" or "daddy" (Adobe-I item 58, Mean= 3.54) and (b) the majority of dog owners strongly affirmed that they consider their dog to be "almost a family member" (Item 57, mean= 4.38).

### *Constructs That Were Expected to Emerge as Factors But Did Not*

Only five clear factors emerged from the factor analysis in Study 1 that was used to create the ADOBE-I scales. Contrary to expectation, some hypothesized constructs did not emerge as factors. Most surprisingly, the following three factors, which reflect important dimensions of dog ownership, did not emerge: "Disrupted Relationships," reflecting the degree to which the dog-owner's relationships with other people are disrupted by their pet's behavior, "Adaptation," reflecting the degree to which the dog owner adjusts their schedule and activities to accommodate the dog, and "Burden/ Destructiveness," reflecting the degree to which the dog destroys property, causes damage, or creates unsanitary or dirty conditions.

There were several items representing each of these constructs in the ADOBE Prototype, so it is unclear why these three constructs failed to emerge as distinct factors in Study 1. This is a topic that deserves additional reflection and study, because the ADOBE would be enhanced as a comprehensive measure of dog-owner relationships if it included scales to measure these constructs.

### *Hypotheses of the Study*

One aim of Study 2 was to test several hypotheses regarding dog-owner relationships. These hypotheses were based on theory and on findings from past research concerning OCPD and OCPD, personality, and loneliness.

Hypothesis 1. As explained in the Introduction of this thesis, it is possible that some individuals' over-attachment to their pets is a form of hoarding and therefore an expression of Obsessive Compulsive Disorder or Obsessive Compulsive Personality Disorder. Research indicates that one of the characteristics of hoarders is excessive attachment to objects. A study by Grisham et al. (2009) found that “the duration of contact with a possession increases a person’s attachment and decreases likelihood that he or she will discard it.” Therefore, based on the hoarding theory regarding over-attachment to pets, it was hypothesized that (a) if one or more ADOBE-I scales developed in Study 1 were found to measure the dog-owner bond or attachment, then (b) participants scores on these scales in Study 2 would be correlated with the length of time that the owner had owned the dog. Study 2 included three additional scales, developed by prior researchers, to measure dog-owner bond: the PAS, the CENSHARE-Intimacy scale, and the CENSHARE-Maintenance Scale. It was hypothesized that these three scales, like the corresponding ADOBE-I scales, would positively correlate with length of dog ownership.

The findings regarding this set of hypotheses are presented in Table 11. As can be seen, the hypotheses were not confirmed. As hoped, two ADOBE-I scales emerged that measured the Dog-Owner Bond: the Dog-Owner Bond scale and the Dog as Child scale. However, length of dog ownership did not significantly correlate with either of these ADOBE-I scales or with the three additional scales developed by earlier researchers to measure dog-owner bond. Thus, no evidence was found that length of ownership increases the dog-owner bond.

Although the findings were negative, a potentially interesting pattern was observed when a scatter-plot was created to show the relationship between length of dog ownership in months and scores on the ADOBE-I Dog-Owner Bond scales (see Figure 1 on the next page, which reproduces Figure 1 in the Results section).

As Figure 1 shows, when a Loess Curve was fitted to the scatterplot, it showed a small and gradual increase in attachment or bonding between owners and their dogs during the first 50 months of ownership. After that period of time, the dog-owner bond seemed to remain constant.

Visual inspection of the scatterplot and Loess Curve in Figure 1 suggests that there may be a small increase in dog-owner bonding during the first four years of ownership. However, this increase was small and unpredicted, and therefore may be the result of chance. Additional research is needed to test this finding before it can be regarded as genuine. At present, the most conservative conclusion is that the findings of the present study did not confirm the hypothesis, based on theories regarding hoarding (Grisham et al., 2009), that attachment to a dog would become stronger during a long period of time, in the same way that attachment to prized objects becomes stronger among hoarders. Thus, the present findings failed to provide support for the theory that over-attachment to a pet is a form of hoarding.

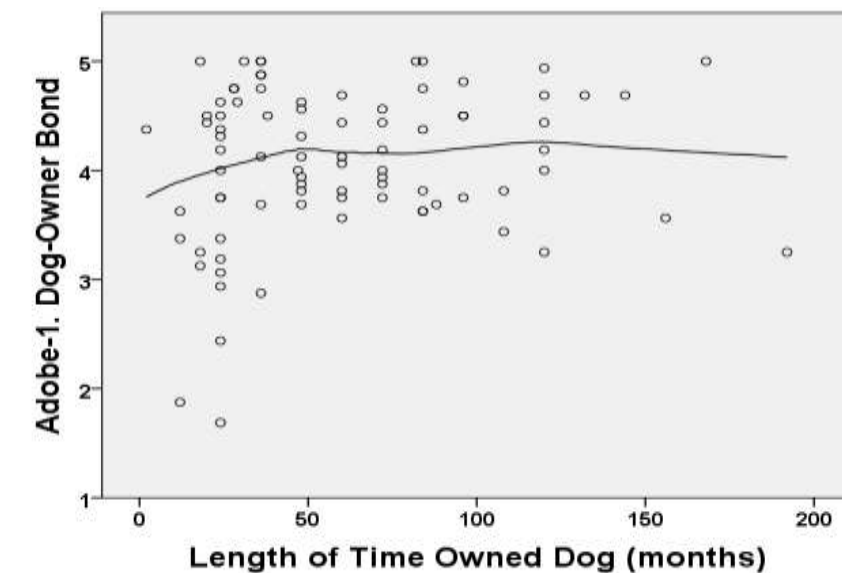


Figure 1: Relationship of length of dog ownership and ADOBE-I Dog-Owner Bond

Hypothesis 2. As explained in the Introduction of this thesis, a possible explanation for strong attachment to a pet is that the attachment is a compensation for inadequate emotional

relationships with other people. Research has found somewhat inconsistent results regarding this idea. On the one hand, studies have found that people without children, and those who live alone, are more likely than other individuals to become strongly attached to their pets (Archer, 1997; Albert & Bulcroft, 1987). On the other hand it has been shown that people with secure attachments in their close human relationships are also more likely to form strong attachments to their dogs (Archer, Ireland, Mills, & Parker, n.d.). Thus, the research literature indicates that attachment to pets (a) is not associated with an impaired ability to form close human relationships, but (b) is associated with decreased opportunities to form such relationships due to life circumstances.

Therefore, in the present study it was hypothesized that (a) if one or more ADOBE-I scales were found to measure dog-owner attachment, then (b) scores on these scales would have only a low correlation (between  $-.10$  and  $.10$ ) with feelings of loneliness as measured by the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980).

This hypothesis was confirmed by Study 2. As already noted, two ADOBE-I scales reflect dog-owner attachment: the Dog-Owner Bond scale and the Dog as Child Scale. As predicted, Study 2 found only low, non-significant correlations of the Dog-Owner Bond ( $r = .013$ ) and Dog as Child ( $r = -.062$ ) scales with the UCLA Loneliness scale (See Table 12). Also relevant are the study's findings concerning the Big Five Neuroticism scale (John & Srivastava, 1999). The correlation between Neuroticism and the UCLA Loneliness scale in Study 2 was  $.596$ . Similar to the findings for the Loneliness scale, Study 2 found only low, non-significant correlations of the Dog-Owner Bond ( $r = -.003$ ) and Dog as Child ( $r = -.030$ ) scales with BFI Neuroticism (See Table 13).

These findings are consistent with the findings from most previous relevant studies, that attachment to pets shows little or no association with feelings of loneliness (Zasloff & Kidd, 1994)



or neuroticism. It may be that some individuals who live alone or do not have children become lonely, strongly attach to their pets, and then the relationship with the dog decreases their feelings of loneliness.

Hypothesis 3. As explained in the Introduction of this thesis, there is support for the view that some problematic aspects of owner personality can be associated with problematic behavioral patterns in their dogs. A study by Podberscek and Serpell (1997) found owners of aggressive dogs to be lower in emotional stability, and to be more shy, tense, and undisciplined than owners of non-aggressive dogs. In addition, Morovati et al. (2008), using the Comrey Personality Scales, found that people who have a more positive attitude toward pets tend to be orderly, extraverted, emotionally stable, and rebellious.

Based on these prior findings, this thesis proposed a set of hypotheses regarding the relationship of the ADOBE-I scales to the Big Five personality factors. First, it was hypothesized that in the present study (a) if one or more ADOBE-I scales were found to measure whether the owners were able to establish and enforce rules for their dog, or whether their relationships with other people were disrupted by their dog, then (b) owners scores on these scales would be negatively correlated with the Big Five traits of Extraversion, Agreeableness and Openness as measured by the Big Five Inventory (John & Srivastava, 1999). In addition, it was hypothesized that (c) if one or more ADOBE-I scales were found to measure dog-owner's dedication to their dog's health, grooming, and hygiene, then (c) this scale would be positively correlated with the Big Five trait of Conscientiousness.

In fact, the ADOBE-I developed in Study 1 does include one scale – Obedient Dog – that measures dog owners' ability to establish rules for their pet, and another scale – Care for Dog's Health – that measures the owners' dedication to their dog's health and hygiene. However, no

ADOBE-I scale emerging from Study I measures how much dog-owners' relationships with family and friends are disrupted or strained by the owners' relationship with their dog. Nevertheless, the ADOBE-I Hostile Dog scale and Legal Problems scale provide some insight into the negative impact of the dog's behavior on the owner's social relationships. Therefore these two scales were included in the analyses presented here.

The hypotheses regarding the Big Five were partially confirmed by the results of Study 2. First, as predicted, owners' ability to control their dog, as measured by the ADOBE Obedient Dog scale, was positively and significantly correlated with Big 5 Extraversion ( $r = .410$ ) and Agreeableness ( $r = .283$ ). Contrary to prediction, however, the correlation with Openness was not significant ( $r = .006$ ). Though not predicted, scores on the Obedient Dog scale were also found to be positively correlated with Conscientiousness ( $r = .310$ ) and negatively correlated with Neuroticism ( $r = -.384$ ).

Second, as predicted, disruption of owners' social relations, as measured by the ADOBE-I Legal Problems and Hostile Dog scales, was found to correlate negatively and significantly with Openness ( $r = -.283$  and  $-.217$ , respectively). As predicted, the Legal Problems scale was significantly and negatively correlated with Agreeableness ( $r = -.217$ ), but contrary to prediction the Hostile Dog scale was not significantly correlated with that Big Five personality trait ( $r = -.139$ ). Contrary to prediction, neither Legal Problems nor Hostile dog was significantly correlated with Extraversion ( $r = -.009$  and  $-.091$ , respectively).

Third, as predicted, owner involvement in maintaining a healthy dog, as measured by the ADOBE Care for Dog's Health, was positively and significantly correlated with Big Five Conscientiousness ( $r = .207$ ). Though not predicted, Care for Dog's Health was also found to be positively correlated with Agreeableness ( $r = .260$ ) and Extraversion ( $r = .232$ ).

Thus, the present study only partially replicated the findings of Morovati et al (2008), who found that individuals with a positive attitude towards their pets tend to be orderly, extraverted, emotionally stable, and rebellious. However, the present findings more consistently replicated the findings of Podberscek and Serpell (1997), who found owners of aggressive dogs to be lower in emotional stability, and to be more shy and tense. In addition, consistent with previous studies, the ADOBE-I Legal Problems and Hostile Dog scales were found to be negatively correlated with Openness and Agreeableness. This finding indicates that those owners whose dogs are aggressive or have legal problems might tend to be inconsiderate, unkind to others, and uncooperative.

Paul's (2000) finding that people who tend to be empathic with animals are also empathic with other people is also supported by the negative correlation of the ADOBE-I Legal Problems scale with Agreeableness. The Legal Problems scale consists of several items related to neglect. Dog owners who are kind, warm and considerate (that is, high in Agreeableness) would not be expected to experience legal problems for neglecting their dog. Also supporting Paul's (2000) findings are the positive correlation of Conscientiousness and Agreeableness with the ADOBE-I Care for Dog's Health scale in Study 2. An owner who is responsible and careful about details (that is, high in Conscientiousness) as well as empathic, caring and considerate (that is, high in Agreeableness) is more likely to be invested in taking good care of the dog's health.

It is worth noting that the ADOBE-I Obedient Dog and Care for Dog's Health scales exhibited similar correlation patterns with the Big Five. Specifically, the Obedient Dog and Care for Dog's Health scales both correlated positively and significantly with Conscientiousness ( $r = .310$  and  $.207$ , respectively), Extraversion ( $r = .410$  and  $.232$ ), and Agreeableness ( $r = .283$  and  $.260$ ). The only discrepancy was for Neuroticism, which was significantly and negatively correlated with the Obedient Dog scale but not with the Care for Dog's Health scale ( $r = -.384$  and

-.141, respectively). This pattern of findings suggest that dog owners' efforts to care for and discipline their dogs (Care for Dog's Health and Obedient Dog) are both related to personality traits of Conscientiousness, Extraversion and Agreeableness.

Interesting correlational patterns with the Big Five were also observed for the ADOBE-I Dog-Owner Bond and Legal Problems scales, but in this case the correlations for one scale were the opposite of the correlations for the other. Specifically, the Dog-Owner Bond scale showed significant *positive* correlations with Big Five Openness and Agreeableness ( $r = .280$  and  $.314$ , respectively), whereas the Legal problems scale showed significant *negative* correlations with the same scales ( $r = .283$  and  $-.217$ ). All other correlations of these ADOBE-I scales with the Big 5 were non-significant (see Table 13). As these findings indicate, individuals high in Openness and Agreeableness are more likely than others to form a strong bond with their dog, whereas individuals low in these traits are more likely than others to experience legal problems. As already noted, the association of dog-owner attachment with high Openness and Agreeableness has been previously reported in the research literature (Triebenbacher, 1998; Wood, Giles-Corti, Bulsara, & Bosch, 2007). Individuals who form positive relations with other people apparently tend to form positive relations with their pets also. On the other hand, the association of Legal Problems with low Openness and Agreeableness has not been previously reported. It may be that individuals low in these traits are more likely to neglect or mistreat their dogs, bringing them to the attention of authorities.

#### *Limitations of the Present Study*

The present study had several limitations. First, all data were based on self-report, giving participants the opportunity to answer in a way that depicted themselves or their dogs in an unrealistically favorable manner. As already noted, some participants changed their answers to the

study questions concerning the inclusion criteria. Although these participants were eliminated from the study, this example illustrates the limitation of exclusive reliance on participants' self-reports. Future research should measure dog-owners behaviors based on observation, the reports of collateral sources, and other sources of information in addition to self-report.

A second limitation is that all data were collected online using M-Turk, which did not allow the direct observation of participants while they completed the online survey. As noted, evidence was found that some participants completed the online questionnaire in an unrealistically short period of time, indicating they did not answer questions carefully and perhaps did not read them. In addition, multi-tasking and decreased attention were not controlled in the study and might have played a factor when participants were answering the surveys.

By including items in the questionnaire to detect careless responding and by excluding participants who completed the questionnaire in a very short time period, the present study probably eliminated a large proportion of participants who responded carelessly. In general, online data collection can provide useful data. Buhrmester, Kwang, and Gosling (2011) found consistency in the reliability of questionnaires across on-site (undergraduate students) and off-site (M-Turk) samples. In addition, Paolacci, Chandler, & Ipeirotis (2010) found similar responses on judgement and decision making tasks when comparing online and on-site samples; and Ramsey et al. (2016) found no differences in accuracy.

A third limitation of the present study is that the ADOBE-I Care for Dog's Health scale showed less than acceptable internal reliability. Perhaps more items should be added to this scale to improve its reliability, such as "My dog has a health plan," "I know where the canine emergency hospital is located." On the other hand, despite its sub-standard reliability, this scale correlated substantially with several other scales in the study, including a correlation of .501 with the

CENSHARE-Maintenance scale, a measure of time investment and interaction with the dog. These correlations indicate that the Care for Dog's Health scale can yield useful and meaningful results, even in its current form.

Fourth, the present study did not include a Confirmatory Factor Analysis of the ADOBE-I. Future research including such an analysis is desirable to examine the factor structure of the ADOBE-I and confirm the unifactorial nature of its scales.

Finally, because only three participants from Study 1 participated in Study 2, the test-retest reliability of the ADOBE-I scales could not be calculated as was originally planned. The ADOBE-I scales will need to be administered to a new pool of subjects that can be more easily available for test-retest purposes. For instance, the ADOBE-I could be administered at a vet clinic or hospital where the likelihood of the participants returning to take a survey during their pet's check-up is more likely compared to online methods.

#### *Future Directions*

There are several ways that future research can build on the findings of the present study. First, additional research is desirable to improve and expand the ADOBE. For example, as already discussed, the present study was unsuccessful in its attempt to generate scales to measure Disrupted Relationships, Adaptation, and Destructive Dog Behavior. All three scales would add to the research value of the ADOBE. For example, an ADOBE "Disrupted Relationships" scale would be highly useful for understanding everyday social strains related to pet ownership that stop short of creating legal problems. Development of Disrupted Relationships, Adaptation and Destructive Dog Behavior scales would be a useful future research project. However, the task of creating these three scales might be challenging. Even though the ADOBE Prototype included several items related to these three constructs, factors corresponding to these constructs did not emerge.

Another research goal is to further examine the psychometric properties and predictive power of the four new scales that were developed in Study 3 as an expansion of the "legal problems" construct. Although Study 3 reports the replicated internal reliability and concurrent validity of the Involvement with Authorities and the Suspected Neglect scales, the internal reliability and validity of the Injuries by Dog and Display of Dog scales should be examined in future research.

Another worthwhile project would be to improve the psychometric properties of the ADOBE Care for Dog's Health scale. As noted, this is the only ADOBE scale with inadequate internal reliability. Future research could aim to develop a more reliable version of this scale, possibly by identifying new items that can be added to it. Another worthwhile research project would be to examine the test-retest reliability of the ADOBE-2 scales, a project that was unsuccessfully attempted in the present study. Yet another project for the more distant future would be to develop a versions of the ADOBE that could be used to study owners of cats and other kinds of pets.

In addition to improving the ADOBE-2, future research can use the test to answer substantive questions regarding dog owners' behaviors. For instance, the three ADOBE-2 scales related to legal problems (Involvement with Authorities, Injuries by Dog, Suspected Neglect) can be used to identify separate groups of dog-owners with each of these problems and then study their characteristics.

Another topic for future exploration is the relationship of the ADOBE-I scales to psychopathology or other problematic character traits. For instance, based on the literature review in the Introduction of this thesis, it would be especially desirable to examine the relationship of dog hoarding and other legal problems to Obsessive Compulsive Disorder and Obsessive

Compulsive Personality Disorder. As documented earlier, individuals who own large numbers of dogs without caring for their needs are sometimes referred to as "dog hoarders." However, it is unclear whether owning large numbers of dogs is truly a form of OCD or OCDP. Future research should examine whether the number of dogs owned, scores on the ADOBE Dog-Owner Bond scale, or scores on any other ADOBE scale, are related to OCD, OCDP, and hoarding of objects other than dogs.

Another topic that could be explored is whether there is a relationship between problems disciplining one's dog (as measured by the Obedient Dog scale) and problems disciplining one's children or setting boundaries in other important relationships. Another future application is to use the ADOBE-2 Dog-Owner Bond scale to see if attachment to dogs is related to attachment to other adults or to children. Attachment to other adults can be measured using the Experiences in Close Relationship Scale (ECR)-Short Form, developed by Wei et al (2007).

Future researchers can also use laboratory experiments to study the characteristics of dog owners and the relationships of these characteristics to the ADOBE scales. As an example, a laboratory study could use a cold pressor task, in which participants submerge their hand in cold water. Participants would have a picture of their dog or their best friend and see how long they can endure pain while looking at picture of dog (or friend). Based on the ADOBE scale scores it could be predicted how long they will keep their hand in cold water.

Another experimental approach could involve applying the methodology of Schnall et al. (2008) who found that participants estimated a hill to be less steep when accompanied by or when thinking of a supporting friend compared to participants who were alone or thought of someone neutral or a disliked person. A similar application of the ADOBE could be implemented comparing participants with varying scores on the Dog-Owner Bond scale. The ADOBE scales



scores could be used to predict participants' estimation of a hill's steepness as they imagine their dogs or hold a leash.

Before closing, it is important to mention that although there is some overlap between the ADOBE-2 and existing dog-related measures, the ADOBE-2 differs from these measures in several important ways. First, the ADOBE-2 focuses specifically on owners of dogs and not owners of companion animals in general. Second, the ADOBE-2 is a multi-dimensional instrument, measuring several different aspects of dog ownership with six scales, in contrast to existing measures that include at most three sub-scales. Third, the ADOBE-2 assesses both positive and negative aspects of pet ownership, whereas existing measures focus primarily on the positive aspects. Because the ADOBE-2 is more comprehensive than existing measures and relatively brief, it is likely to be useful to future researchers who study pet-owner relationships.

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## Appendix A

### ADOBE Prototype

#### Assessment of Dog Owners' Behaviors and Experiences

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In this questionnaire, you are being asked to provide information about you and your dog.

Please indicate the extent to which you agree or disagree with each statement below concerning you, your dog, and your relationship.

For example:

Select 1 if you ***Strongly disagree*** with the statement about you or your dog.

Select 2 if you ***Disagree*** with the statement about you or your dog.

Select 3 if you ***Neither agree nor disagree*** with the statement about you or your dog.

Select 4 if you ***Agree*** with the statement about you or your dog.

Select 5 if you ***Strongly agree*** with the statement about you or your dog.

When answering the questionnaire, please think of your current dog. If you own more than one dog, then answer the questionnaire for your *favorite* among your current dogs. If you do not have a favorite dog, answer the questions for the current dog you have owned the *longest*. Your answers are confidential, so please answer all of the items as honestly as you can.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

1. I often give my dog little treats.
2. Someone in my house makes sure that my dog's droppings are picked up every day or two.
3. When I walk my dog, I'm careful to pick up his/her droppings.
4. I take great care of my dog's health.
5. I must admit that sometimes I haven't looked after my dog's needs very well.
6. My dog is groomed or clipped at least once every two months.
7. I always make sure my dog has enough to eat and drink.
8. I brush my dog's teeth.
9. Someone in my house takes my dog out for walks at least three times each week.
10. Even when I'm sick, I make sure my dog gets his daily routine.
11. There's a limit to how much I would spend on my dog's veterinary bills.
12. I buy special toys or foods to keep my dog's teeth clean.
13. I give my dog vitamins or nutritional supplements.
14. I bathe my dog at least once each month.

Appendix A (continued)

15. I brush my dog at least once each week.
16. I regularly give my dog vitamins or nutritional supplements.
17. I sometimes think I should groom my dog more often.
18. I often cook something for my dog.
19. I feed my dog ordinary dog food rather than any special brand or kind of food.
20. I must admit that I sometimes give my dog little "treats" that probably are not healthy for him/her.
21. My dog sees the vet at least once each year.
22. I carefully keep up the vaccinations for my dog
23. I don't spend much energy cleaning or grooming my dog.
24. My dog has never gone without a meal.
25. My dog has never gone without water.
26. I hardly ever give my dog treats.
27. My dog sometimes goes without meals because I'm unable to feed him.
28. I have had disagreements or misunderstandings with friends or family about my dog.
29. "People come first" is my motto concerning the importance of dogs versus people.
30. I have to admit that some of my friends or family have disliked coming to my house because of my dog.
31. It is important to me that my friends like my dog.
32. I sometimes dislike the way my friends treat their dogs.
33. It's hard for me to get close to people who don't like dogs or other pets.
34. In many respects, dogs are better than people.
35. The world would be a better place if people had some of the good qualities of dogs.
36. I sometimes prefer the company of my dog to the company of other people.
37. I have probably lost some potential friends because of my dog.
38. I have had some conflict with people who just don't seem to understand dogs.
39. When choosing friends, I consider whether they will get along with my dog
40. I believe that the needs of people should nearly always come first before the needs of my dog.
41. My friends are all happy to see my dog.
42. I think there's something a little wrong with people who don't like dogs.
43. The more I get to know other people, the more I love my dog.
44. My dog has more love and compassion than most people do.
45. My dog is my favorite person.
46. Although I like my dog, most of the time I prefer the company of other people.
47. My dog helps me meet new people (for instance, when I walk him/her and others approach me).
48. Sometimes people get irritated with me because of something my dog has done.
49. I have sometimes defended my dog from criticism by people who don't appreciate him/her.
50. My friends or relatives have sometimes complained about my dog.
51. Some people have told me I should get rid of my dog.
52. My dog has a special place to sleep at night.
53. I understand what my dog is thinking.

Appendix A (continued)

54. My dog is the only person that loves me consistently.
55. My dog brightens my day.
56. I hardly ever discuss my dog with other people.
57. I would be devastated if my dog died.
58. My dog sleeps in my bedroom at night.
59. My dog is the only one that makes me completely happy
60. My dog sometimes sleeps in the same bed that I do.
61. If I could afford it, I would take my dog to a "doggy daycare" so he would be happy while I am at work.
62. I sometimes feel a psychic connection with my dog.
63. I sometimes prepare special food for my dog.
64. My dog loves me more than any other person.
65. I carry pictures of my dog in my wallet or purse.
66. It is very important to me that my dog does not feel lonely.
67. I often talk with my friends about my dog.
68. If I am away from my dog for more than a day or two, I really miss him/her.
69. I sometimes leave work early so I can get home and spend time with my dog.
70. My dog is one of my best friends.
71. I would be devastated if something bad were to happen to my dog.
72. I truly love my dog.
73. I would die for my dog.
74. If I had to choose between my closest human friend and my dog, it would be a difficult choice.
75. If I have a bad day, I'm glad to come home to my dog.
76. I take my dog places with me as much as I can.
77. I enjoy playing games with my dog at home.
78. My dog is very unhappy when I'm away.
79. I can often read my dog's thoughts.
80. My dog gets along fine by himself when I'm gone.
81. If my dog were lost, I would do almost anything to get him/her back.
82. I often let my dog take car rides with me because he/she likes it.
83. I often have conversations with people about dogs.
84. When I get together with friends, we sometimes end up talking about our dogs.
85. I like to play rough with my dog.
86. The quality of my life is better because of my dog.
87. For me, the benefits of having a dog far outweigh the drawbacks.
88. I love to shower my dog with affection.
89. My dog has practically saved my life.
90. I have difficulty imagining life without a dog.
91. Really good things have happened to me because of my dog.
92. Caring for my dog gives me a reason to get out of bed each day.
93. My dog is one of the most important sources of affection and love in my life.
94. I know that my dog loves me.
95. My dog can tell that I really love him/her.

Appendix A (continued)

96. My dog doesn't really care much about me one way or the other.
97. I have sometimes "sensed" that something was wrong with my dog, even though there was no clear outward sign.
98. I think it hurts my dog's feelings when people don't respond well to him/her.
99. My dog makes me feel good.
100. My life wouldn't be nearly so happy without my dog.
101. I'm really glad to have my dog.
102. I try to spend as much time with my dog as possible
103. My dog always makes me feel better.
104. My dog loves me.
105. My life feels fuller because I have a dog.
106. Some people have described my dog as vicious.
107. My dog has bitten me badly, but I know he did not mean to.
108. My dog has hurt some people.
109. My dog has hurt some people, but it was their fault.
110. My dog has threatened some people.
111. My dog has never hurt or scared a child.
112. No one would ever describe my dog as "mean."
113. My dog can be pretty hostile toward some people.
114. My dog can be dangerous sometimes.
115. My dog has a sweet disposition toward everybody.
116. My dog can sometimes act pretty mean.
117. My dog never growls at people.
118. My dog has injured at least one other person, but I don't think it was my dog's fault.
119. My dog has never injured anyone.
120. Some people are afraid of my dog.
121. No one has ever expressed any fear of my dog
122. My dog growls at people fairly often.
123. I have been injured by my dog.
124. I consider my dog to be almost like a member of my family.
125. Sometimes people may think I am over-protective of my dog.
126. My dog is not my whole life, but he/she makes my life whole.
127. I consider my dog to be almost like my child.
128. Although I like my dog, I would never say that I feel like he or she is my "child."
129. A friend or relative has sometimes referred to me as my dog's "mommy" or "daddy."
130. I sometimes refer to myself as "mommy" or "daddy" when I talk with my dog (such as "Mommy thinks you're a good dog.")
131. I have pictures of my dog displayed in my house.
132. I have pictures of my dog at work.
133. I sometimes use a little sweet nickname for my dog.
134. I sometimes talk baby talk to my dog.
135. I give presents to my dog on special occasions or holidays.
136. I give presents to my dog.
137. I celebrate my dog's birthday.

Appendix A (continued)

138. When I send Christmas or birthday cards, I sometimes sign my dog's name.
139. My dog has different outfits for special occasions.
140. I have taken out my dog in a doggy stroller.
141. If my dog died, I would feel like I lost a family member.
142. My dog has blankets and pillows.
143. When I hold my dog, I hold him like a sleeping baby.
144. Others dogs in my extended family are considered to be my dog's cousins.
145. I give my dog kisses every time I greet him/her.
146. My dog licks me in the face as a greeting when I get home.
147. Some people have said I treat my dog more like a person than an animal.
148. Some people have told me I pay too much attention to my dogs.
149. I think some of my family and friends think I spend too much time or money on my dog.
150. There have been some unfair complaints about my dog.
151. Some people have commented that my house isn't entirely clean, due to my dog.
152. My door has scratch marks from my dog.
153. My dog causes me a lot of extra work.
154. Some people have complained that my dog has an unpleasant smell.
155. My dog sometimes annoys people by slobbering on them.
156. My dog sometimes drools on people.
157. Some people have complained that my house smells different because of my dog.
158. I often have dog hair on my clothes.
159. There is not any dog hair on the furniture in my house.
160. My dog sometimes drips saliva on furniture or people's clothes.
161. My dog has chewed my personal belongings at least once during the last two months.
162. My dog sometimes has "accidents" in the house.
163. My dog sometimes damages furniture or objects in my house.
164. My dog sometimes chews up objects that he/she shouldn't.
165. My dog has sometimes damaged objects or property belonging to other people.
166. Some people have complained about my dog's urine or feces.
167. My dog has been in trouble with the law.
168. I recognize I have too many dogs.
169. My dog causes me a lot of trouble.
170. My dog is well house-trained.
171. Compared to other dogs, I must admit that my dog isn't very bright.
172. My dog is beautiful.
173. My dog is gentle toward people.
174. My dog is very friendly.
175. My dog always does what I say.
176. My dog is generally affectionate toward people.
177. My dog gets along well with other animals.
178. My dog is very loyal.
179. My dog is very intelligent.
180. My dog is well-disciplined.
181. My dog has taken food that was on a table or other place when he wasn't supposed to.

Appendix A (continued)

182. My dog always obeys me promptly.
183. My dog goes outside immediately when I tell him/her to.
184. My dog likes children.
185. My dog often barks when people come to the door.
186. My dog gets nervous around children.
187. My dog often disobeys me.
188. It sometimes seems to me that my dog is smarter than some people.
189. My dog never barks at anyone.
190. My dog is not particularly good looking.
191. My dog is very well behaved.
192. My dog has sometimes caused me embarrassment.
193. I must admit my dog is sometimes hard to control.
194. If my dog were terminally ill and in pain, I would put him/her to sleep.
195. If my dog had a serious chronic illness, I would put him/her to sleep.
196. If I had to choose between (a) paying for my dog to have very expensive surgery and (b) putting my dog to sleep, I would probably put him/her to sleep.
197. I doubt that I would ever put my dog to sleep.
198. If my dog was seriously disfigured, I would put him/her to sleep.
199. If my dog had an accident or sickness that caused him/her to lose control of his/her bladder, I would put him/her to sleep.
200. If my dog were injured, I would spend as much money as I could to restore him/her to health.
201. I have sometimes wished that I could run a shelter for dogs.
202. I have alerted Animal Control about a dog that was being mistreated or neglected.
203. I would intervene if I saw a dog being abused or neglected.
204. I will not buy products that have been tested on laboratory animals.
205. I have given donations to the Humane Society or some other organization that helps animals.
206. If I won the lottery, I would give some of the money to help neglected or mistreated animals.
207. I disapprove of pounds that put homeless dogs to sleep.
208. If I could, I would like to provide a place to live for homeless dogs.
209. I would never consider moving someplace that did not allow dogs.
210. I've considered buying insurance for my dog.
211. When my dog dies, I plan to bury him/her in a special place.
212. I think it is a little silly for people to bury their pets in pet cemeteries.
213. When my dog dies, I might consider buying a tombstone for his/her grave.
214. I would probably enjoy taking care of dogs in an animal hospital.
215. My dog had a traumatizing life before I got him.
216. I sometimes feed my dog from the table.
217. I sometimes let my dog sit with me on a chair or couch.
218. I think it is very important to be patient with dogs.
219. I have to admit that sometimes I raise my voice to my dog.



Appendix A (continued)

- 220. Authorities such as police or animal control officers have sometimes contacted me about my dog.
- 221. I think it is very important to be strict with dogs.
- 222. There has been at least one occasion when I thought that my dog might be taken from me and put in the pound.
- 223. My dog has attended obedience classes.
- 224. My dog has attended different obedience classes taught by different instructors.
- 225. My dog flunked out of dog obedience training.
- 226. I never get angry with my dog.
- 227. My dog eats from the table.
- 228. I don't think it is a good idea to be too strict with dogs.
- 229. My dog has been punished for taking food that he wasn't supposed to.
- 230. I have sometimes disobeyed minor laws or legal regulations because of my dog.
- 231. I have sometimes taken my dog places where the laws or regulations do not allow dogs.
- 232. My neighbors have complained about my dog.
- 233. I sometimes yell at my dog.
- 234. I have changed or cancelled my travel plans because of my dog.
- 235. If I had to choose between (a) paying the rent or mortgage to keep my house and (b) paying for surgery to save the life of my dog, I might choose to pay for my dog's surgery.
- 236. I might leave my dog in a kennel, but never for longer than three days.
- 237. I would consider putting my dog in a kennel if I had to leave town for a long period of time.
- 238. When I go on a trip, I prefer to take my dog with me.
- 239. I sometimes skip social events so that I can get home and take care of my dog.
- 240. I sometimes leave social events early so that I can get home and take care of my dog.
- 241. I sometimes cut my work short so that I can get home and take care of my dog.
- 242. I am very uncomfortable if I eat in front of my dog when he/she is hungry.
- 243. I have gone hungry to buy food for my dog.
- 244. I only look for pet-friendly hotels when I travel so I can take my dog with me.
- 245. Leaving my dog alone for a long period does not bother me.
- 246. I always plan ahead so I have free time during the day to spend with my dog.
- 247. I have a subscription to a dog magazine.
- 248. I have read books about dog care.
- 249. I enjoy watching television shows about dogs.
- 250. My dog has participated in dog shows.
- 251. My dog barks a lot at people.
- 252. My dog has lots of toys.
- 253. My dog has a special chair or couch to sit on.
- 254. I buy expensive foods, such as steaks for my dog.
- 255. People sometimes joke about how much care and attention I give my dog.
- 256. Some people might say that I go overboard for my dog.
- 257. Some people might say that I have spent too much money taking care of my dog.
- 258. Some people think I do not take good care of my dog(s).
- 259. I have more than two dogs.

Appendix A (continued)

260. I only have one dog.

261. I feel a deep connection with my dog.

262. I would rather own three or more dogs than just one.

263. I feel that having a dog makes my life happier.

264. My car has dog bumper stickers

265. I cannot see myself having less than three dogs.

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## Appendix B

### Informed Consent Form

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#### University of Texas at El Paso (UTEP) Institutional Review Board Informed Consent Form for Research Involving Human Subjects

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**Protocol Title: The Assessment of Dog Owners' Behaviors and Experiences**  
**Advisor: James M. Wood, Ph.D.**  
**Principal Investigator: Paola N. Balcazar Soto**  
**UTEP Psychology Department**

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#### **Introduction**

You are being asked to voluntarily take part in the research project described below. Please take your time making a decision. Before agreeing to take part in this research study, it is important that you read the consent form that describes the study.

#### **Why is this study being done?**

The purpose of this study is to create a questionnaire for dog owners, in which they can report on their experiences with their dog. The final version of the questionnaire will be created based on the answers that you and other dog owners give to this version of the questionnaire.

This version of the questionnaire contains 265 items that ask you to indicate your attitudes, beliefs, experiences and behaviors regarding your dog. Approximately 300 participants will be enrolling in this study through Amazon Mechanical Turk.

#### **What is involved in the study?**

If you agree to take part in this study, you will be asked to complete a form with personal and demographic information. Afterward, you will be asked to answer approximately 265 questions regarding your relationship with your dog.

#### **What are the risks and discomforts of the study?**

The study poses minimal risks to you. You may, however, feel discomfort answering some of the questions about you or your dog. You are not required to answer questions you are not comfortable answering. You will not be penalized for not answering questions, and you have the right to discontinue your participation at any time.

#### **What will happen if I am injured in this study?**

The University of Texas at El Paso and its affiliates do not offer to pay for or cover the cost of medical treatment for research related illness or injury. No funds have been set aside to pay or reimburse you in the event of such injury or illness. You will not give up any of your legal rights by signing this consent form. You should report any such injury to James M. Wood, Ph.D. who

## Appendix B (continued)

can be reached at (915) 747-6570 or jawood@utep.edu and to the Institutional Review Board (IRB) at UTEP at (915) 747-8841 or irb.orsp@utep.edu.

### **Are there benefits to taking part in this study?**

Upon completion of the research study, you will be compensated with \$ 0.50 which will be credited to your Amazon account. At the end of the study, an explanation of the research will be offered to you. Through this, you should gain greater understanding of how psychological research is conducted and the types of research conducted at this university.

### **What other options are there?**

You have the option not to take part in this study. There will be no penalties involved if you choose not to take part in this study.

### **Who is paying for this study?**

Funding for this study is provided by the Principal Investigator and the Advisor, Dr. James Wood.

### **What are my costs?**

There are no direct costs. You will be responsible for having access to a computer and to the internet in order to complete this study.

### **Will I be paid to participate in this study?**

Upon completion of the research study, you will be compensated with \$ 0.50 which will be credited to your Amazon account.

### **What if I want to withdraw, or am asked to withdraw from this study?**

Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you do not take part in the study, there will be no penalty. If you choose to take part, you have the right to stop at any time.

### **Who do I call if I have questions or problems?**

If you have questions or problems, you may email Paola Balcazar Soto at pnbalcazarsoto@miners.utep.edu. If you have questions or concerns about your participation as a research subject, please contact the Institutional Review Board (IRB) at UTEP at (915) 747-8841 or irb.orsp@utep.edu.

### **What about confidentiality?**

1. Your participation in this study is confidential. This form is collected prior to the data collection stage, meaning individual names will not be collected with the actual data. Data from any individual is identifiable only by the experimenter. To maintain confidentiality, informed consent and data are stored in secure Internet servers.
2. Confidentiality will be maintained by ensuring that only experimenters handle the data and no one else will be allowed to see it. Results will be reported as an aggregation of data and only the

## Appendix B (continued)

experimenters can connect individual responses to participants. Upon completion of the study, the informed consent and debriefing forms will be stored in a secure Internet server.

### **Authorization Statement**

I have read each page of this paper about the study (or it was read to me). I know that being in this study is voluntary and I choose to be in this study. I know I can stop being in this study without penalty. Upon request, I can get a copy of this consent form and can get information on results of the study later, if I wish.

\_\_\_\_\_ Yes, I agree to participate in this study

\_\_\_\_\_ No, I do not agree to participate in this study

Appendix C  
Demographic Information

Age: \_\_\_\_\_

Gender: \_\_\_\_\_ Male \_\_\_\_\_ Female

Ethnicity:

\_\_\_\_\_ Non-Hispanic White

\_\_\_\_\_ Hispanic or Latino

\_\_\_\_\_ Black or African American

\_\_\_\_\_ Native American or American Indian

\_\_\_\_\_ Asian/ Pacific Islander

\_\_\_\_\_ Other (Please specify)

Marital status:

\_\_\_\_\_ Single

\_\_\_\_\_ Married

\_\_\_\_\_ Divorced

\_\_\_\_\_ Widowed

How many dogs have you owned during your life? \_\_\_\_\_

How many dogs do you presently own? \_\_\_\_\_

For how long have you owned your current dog? \_\_\_\_\_ (Please specify amount of time in months or years)

If you have more than one dog, for how long have you own them? (Please specify amount of time in months or years)

Dog 2: \_\_\_\_\_

Dog 3: \_\_\_\_\_

Dog 4: \_\_\_\_\_

Dog 5: \_\_\_\_\_

Appendix C (continued)

Where did you obtain your dog(s)?

\_\_\_\_\_ Pet shop

\_\_\_\_\_ Animal shelter

\_\_\_\_\_ Breeders

\_\_\_\_\_ Friends or relatives

\_\_\_\_\_ Other (please specify)

## Appendix D

### Informed Consent Form

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#### **University of Texas at El Paso (UTEP) Institutional Review Board Informed Consent Form for Research Involving Human Subjects**

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**Protocol Title: The Assessment of Dog Owners' Behaviors and Experiences**

**Advisor: Dr. James M. Wood, Ph.D.**

**Principal Investigator: Paola N. Balcazar Soto**

**UTEP Psychology Department**

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#### **Introduction**

You are being asked to voluntarily take part in the research project described below. Please take your time making a decision. Before agreeing to take part in this research study, it is important that you read the consent form that describes the study.

#### **Why is this study being done?**

The purpose of this study is to evaluate how well a new scale called the Assessment of Dog Owners' Behaviors and Experiences (ADOBE) measures some factors that are present in a dog-owner relationship and to understand better the relationship between dog owners' personalities and their relationships with their dogs. If you decide to enroll in this study, your active participation will last about 90 minutes.

#### **What is involved in the study?**

If you agree to take part in this study, you will be asked to present personal and demographic information. Afterward, you will be asked to complete a series of questions regarding your relationship with your dog, feelings of loneliness, and your personality.

#### **What are the risks and discomforts of the study?**

The study poses minimal risks to you. You may, however, feel discomfort answering some of the questions. You are not required to answer questions you are not comfortable answering. You will not be penalized for not answering questions, and you have the right to discontinue your participation at any time.

#### **What will happen if I am injured in this study?**

The University of Texas at El Paso and its affiliates do not offer to pay for or cover the cost of medical treatment for research related illness or injury. No funds have been set aside to pay or reimburse you in the event of such injury or illness. You will not give up any of your legal rights by signing this consent form. You should report any such injury to James M. Wood, Ph. D. who can be reached at (915) 747-6570 or jawood@utep.edu and to the Institutional Review Board (IRB) at UTEP at (915) 747-8841 or irb.orsp@utep.edu.



## Appendix D (continued)

### **Are there benefits to taking part in this study?**

Upon completion of the research study, you will be compensated with \$ 0.50 which will be credited to your Amazon account. At the end of the study, an explanation of the research will be offered to you. Through this, you should gain greater understanding of how psychological research is conducted and the types of research conducted at this university

### **What other options are there?**

You have the option not to take part in this study. There will be no penalties involved if you choose not to take part in this study.

### **Who is paying for this study?**

Funding for this study is provided by the Principal Investigator and the Advisor, Dr. James Wood.

### **What are my costs?**

There are no direct costs. You will be responsible for having access to a computer and to the internet in order to complete this study.

### **Will I be paid to participate in this study?**

Upon completion of the research study, you will be compensated with \$ 0.50 which will be credited to your Amazon account.

No other funding is provided for this study.

### **What if I want to withdraw, or am asked to withdraw from this study?**

Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you do not take part in the study, there will be no penalty. If you choose to take part, you have the right to stop at any time.

### **Who do I call if I have questions or problems?**

If you have questions or problems, you can email Paola N. Balcazar Soto at [pnbalcazarsoto@miners.utep.edu](mailto:pnbalcazarsoto@miners.utep.edu)

If you have questions or concerns about your participation as a research subject, please contact the Institutional Review Board (IRB) at UTEP at (915) 747-8841 or [irb.orsp@utep.edu](mailto:irb.orsp@utep.edu).

### **What about confidentiality?**

1. Your participation in this study is confidential. This form is collected prior to the data collection stage, meaning individual names will not be collected with the actual data.
2. However, if you were invited to participate in this study, additional personal information was asked during study 1 to create a unique code. This code is going to be used by the experimenter to identify your responses from study 1 and link them with the responses on this study.

#### Appendix D (continued)

3. Data from any individual is identifiable only by the experimenters. To maintain confidentiality, informed consent and data are stored in secure Internet servers.
4. Confidentiality will be maintained by ensuring that only experimenters handle the data and no one else will be allowed to see it. Results will be reported as an aggregation of data and only the experimenters can connect individual responses to participants. Upon completion of the study, the informed consent and debriefing forms will be stored in a secure server.

#### **Authorization Statement**

I have read each page of this paper about the study. I know that being in this study is voluntary and I choose to be in this study. I know I can stop being in this study without penalty. I will get a copy of this consent form now and can get information on results of the study later, if I wish.

\_\_\_\_\_ Yes, I agree to participate in this study  
\_\_\_\_\_ No, I do not agree to participate in this study

## Appendix E

### Assessment of Dog Owners' Behaviors and Experiences, Version I (ADOBE-I)

---

In this questionnaire, you are being asked to provide information about you and your dog. Please indicate the extent to which you agree or disagree with each statement below concerning you, your dog, and your relationship.

**1. My dog is one of the most important sources of affection and love in my life.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**2. My dog is one of my best friends.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**3. My life wouldn't be nearly so happy without my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**4. My dog is my favorite person.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**5. I have difficulty imagining life without a dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**6. Caring for my dog gives me a reason to get out of bed each day.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix E (Continued)

**7. My life feels fuller because I have a dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**8. If I am away from my dog for a very long time, I really miss him/her.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**9. My dog is the only one that makes me completely happy.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**10. My dog always makes me feel better.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**11. I try to spend as much time with my dog as possible.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**12. I feel a deep connection with my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**13. My dog loves me more than any other person.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix E (Continued)

**14. If I have a bad day, I am glad to come home to my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**15. I love to shower my dog with affection.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**16. I truly love my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**17. Authorities such as police or animal control officers have sometimes contacted me about my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**18. My dog has been in trouble with the law.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**19. I recognize I have too many dogs.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**20. There has been at least one occasion when I thought that my dog would be taken from me and put in the pound.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix E (Continued)

**21. My dog flunked out of dog obedience training.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**22. Some people think I do not take good care of my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**23. My dog sometimes goes without meals because I am unable to feed him.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**24. My neighbors have complained about my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**25. My dog has injured at least one other person, but I don't think it was my dog's fault.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**26. My dog causes me a lot of trouble.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**27. My dog has attended different obedience classes taught by different instructors.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix E (Continued)

**28. My dog has bitten me badly, but I know he did not mean to.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**29. Some people have complained that my dog has an unpleasant smell.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**30. Some people have complained about my dog's urine or feces.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**31. My dog has a sweet disposition toward everybody.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**32. My dog can be pretty hostile toward some people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**33. My dog can sometimes act pretty mean.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**34. My dog has threatened some people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix E (Continued)

**35. No one has ever expressed any fear of my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**36. My dog never growls at people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**37. Some people are afraid of my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**38. My dog is very friendly.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**39. My dog is well-disciplined.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**40. My dog is very well behaved.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**41. My dog always obeys me promptly.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree



Appendix E (Continued)

**42. My dog often disobeys me.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**43. My dog always does what I say.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**44. My dog goes outside immediately when I tell him/her to.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**45. I must admit my dog is sometimes hard to control.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**46. My dog sees the vet at least once each year.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**47. My dog is groomed or clipped at least once every two months.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**48. I brush my dog's teeth.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix E (Continued)

**49. I take great care of my dog's health.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**50. I carefully keep up the vaccinations for my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**51. Someone in my house takes my dog out for walks at least three times each week.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**52. I bathe my dog at least once each month.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**53. I consider my dog to be almost like my child.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**54. I sometimes talk baby talk to my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**55. Although I like my dog, I would never say that I feel like he or she is my "child."**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix E (Continued)

**56. When I hold my dog, I hold him like a sleeping baby.**

1	2	3	4	5
Strongly	Disagree	Neither agree	Agree	Strongly
Disagree		nor disagree		Agree

**57. I consider my dog to be almost like a member of my family.**

1	2	3	4	5
Strongly	Disagree	Neither agree	Agree	Strongly
Disagree		nor disagree		Agree

**58. A friend or relative has sometimes referred to me as my dog's "mommy" or "daddy."**

1	2	3	4	5
Strongly	Disagree	Neither agree	Agree	Strongly
Disagree		nor disagree		Agree

## Appendix F

### Assessment of Dog Owners' Behaviors and Experiences, Version 2 (ADOBE-2)

---

In this questionnaire, you are being asked to provide information about you and your dog. Please indicate the extent to which you agree or disagree with each statement below concerning you, your dog, and your relationship.

**1. My dog is one of the most important sources of affection and love in my life.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**2. My dog is one of my best friends.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**3. My life wouldn't be nearly so happy without my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**4. My dog is my favorite person.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**5. I have difficulty imagining life without a dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**6. Caring for my dog gives me a reason to get out of bed each day.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix F (Continued)

**7. My life feels fuller because I have a dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**8. If I am away from my dog for a very long time, I really miss him/her.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**9. My dog is the only one that makes me completely happy.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**10. My dog always makes me feel better.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**11. I try to spend as much time with my dog as possible.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**12. I feel a deep connection with my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**13. My dog loves me more than any other person.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix F (Continued)

**14. If I have a bad day, I am glad to come home to my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**15. I love to shower my dog with affection.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**16. I truly love my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**17. Authorities such as police or animal control officers have sometimes contacted me about my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**18. My dog has been in trouble with the law.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**19. There has been at least one occasion when I thought that my dog would be taken from me and put in the pound.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**20. My dog has injured at least one other person, but I don't think it was my dog's fault.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix F (Continued)

**21. My dog can be dangerous sometimes**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**22. My dog has bitten me badly, but I know he did not mean to.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**23. My dog has hurt some people**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**24. I recognize I have too many dogs.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**25. Some people think I do not take good care of my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**26. My dog sometimes goes without meals because I am unable to feed him.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**27. My neighbors have complained about my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix F (Continued)

**28. My dog has a sweet disposition toward everybody.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**29. My dog can be pretty hostile toward some people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**30. My dog can sometimes act pretty mean.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**31. My dog has threatened some people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**32. No one has ever expressed any fear of my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**33. My dog never growls at people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**34. Some people are afraid of my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree



Appendix F (Continued)

**35. My dog is very friendly.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**36. My dog is well-disciplined.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**37. My dog is very well behaved.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**38. My dog always obeys me promptly.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**39. My dog often disobeys me.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**40. My dog always does what I say.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**41. My dog goes outside immediately when I tell him/her to.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix F (Continued)

**42. I must admit my dog is sometimes hard to control.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**43. My dog sees the vet at least once each year.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**44. My dog is groomed or clipped at least once every two months.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**45. I brush my dog's teeth.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**46. I take great care of my dog's health.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**47. I carefully keep up the vaccinations for my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**48. Someone in my house takes my dog out for walks at least three times each week.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix F (Continued)

**49. I bathe my dog at least once each month.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**50. I consider my dog to be almost like my child.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**51. I sometimes talk baby talk to my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**52. Although I like my dog, I would never say that I feel like he or she is my "child."**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**53. When I hold my dog, I hold him like a sleeping baby.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**54. I consider my dog to be almost like a member of my family.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**55. A friend or relative has sometimes referred to me as my dog's "mommy" or "daddy."**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Appendix F (Continued)

**56. My car has dog bumper stickers.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**57. I have a subscription to a dog magazine.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**58. My dog has participated in dog shows.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**59. I buy expensive foods, such as steaks for my dog.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

**60. I have taken out my dog in a doggy stroller.**

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Table 2: Demographic Information for Participants in Study 1

<b>Gender</b>	<i>Percentage</i>
Male	42.3
Female	57.4
No response	0.3
<b>Ethnicity</b>	
Non-Hispanic White	81.1
Hispanic/Latino	6.9
Black/African American	4.3
Native American	.6
Asian American/Pacific Islander	5.4
Other	1.7
<b>Marital Status</b>	
Single	46.6
Married	44.0
Divorced	8.0
Widowed	1.1
No response	.3
<b>Number of dogs presently own</b>	
One	70.2
Two	21.0
Three	6.3
Four	.9
Five	.3
Eight	.3
Nine	.3
Eleven	.3
No response	.3
<b>Place where dog was obtained</b>	
Pet shop	5.1

Table 2 (continued)

<b>Place where dog was obtained</b>	<i>Percentage</i>
Animal Shelter	34.4
Breeders	25.1
Friends/Relatives	23.0
Other	12.2

Table 3: Eigenvalues of Principal Components Analysis of 265 ADOBE Prototype Items in Study 1. N = 352

Component	Total	Percentage of Explained Variance
1	41.094	15.507
2	30.394	11.469
3	10.502	3.963
4	6.173	2.329
5	5.333	2.013
6	4.721	1.781
7	4.548	1.716
8	3.996	1.508
9	3.494	1.319
10	3.369	1.271
11	3.129	1.181
12	3.072	1.159
13	2.930	1.106
14	2.745	1.036
15	2.721	1.027
16	2.668	1.007
17	2.577	.972
18	2.393	.903
19	2.384	.900
20	2.360	.890
21	2.243	.846
22	2.206	.832
23	2.150	.811
24	2.094	.790
25	2.078	.784
26	1.975	.745
27	1.929	.728
28	1.904	.718
29	1.867	.704
30	1.780	.672
31	1.748	.660
32	1.722	.650
33	1.687	.636

Table 3 (continued)

<b>Component</b>	<b>Total</b>	<b>Percentage of Explained Variance</b>
34	1.646	.621
35	1.610	.607
36	1.556	.587
37	1.532	.578
38	1.486	.561
39	1.470	.555
40	1.430	.540
41	1.413	.533
42	1.384	.522
43	1.350	.509
44	1.332	.503
45	1.313	.495
46	1.297	.490
47	1.270	.479
48	1.254	.473
49	1.236	.466
50	1.232	.465
51	1.203	.454
52	1.186	.448
53	1.160	.438
54	1.150	.434
55	1.128	.426
56	1.123	.424
57	1.106	.417
58	1.073	.405
59	1.061	.400
60	1.031	.389
61	1.023	.386
62	1.019	.385



Table 4: Principal Axis Factor Analysis with Promax Rotation for ADOBE Prototype in Study 1  
(Loadings Greater than .50 are in Bold Print). N = 352  
Components

	1	2	3	4	5	6	7
‘Dog is most important source of affection and love’	<b>.773</b>	.067	-.022	.033	-.121	-.006	.037
‘Consider dog to be almost like child’	<b>.767</b>	-.111	.056	-.030	-.031	-.040	-.109
‘Dog is one of my best friends’	<b>.760</b>	.040	.019	.077	.012	-.137	.088
‘People said treat dog more like person than animal’	<b>.754</b>	.164	-.001	-.032	.005	.009	-.122
‘Life wouldn’t be so happy without dog’	<b>.735</b>	-.059	.030	-.046	-.018	-.098	.066
‘Dog is my favorite person’	<b>.720</b>	.252	-.065	.094	-.165	-.070	-.159
‘People think I am over-protective of dog’	<b>.695</b>	.141	.076	-.146	-.003	-.106	-.101
‘Difficulty imagining life without dog.’	<b>.694</b>	-.099	.004	-.019	.001	-.077	.027
‘Caring for dog gives is reason to get out of bed’	<b>.686</b>	.028	.065	.022	.038	.005	-.089
‘Life feels fuller because I have a dog.’	<b>.684</b>	-.130	.020	-.061	.091	-.128	.196
‘More I know people more I love my dog’	<b>.679</b>	.073	.013	.064	-.210	.012	-.041
‘Away for very long time, I really miss him’	<b>.677</b>	-.081	-.004	-.076	.102	-.132	.194
‘Dog is only one makes me completely happy’	<b>.668</b>	.269	.077	.095	-.193	-.108	-.186
‘Dog always makes me feel better.’	<b>.668</b>	.013	.003	.069	.081	-.247	.231
‘Quality of life better because of dog’	<b>.666</b>	-.082	.010	-.005	.083	-.102	.227
‘Try to spend as much time with dog as possible’	<b>.657</b>	-.028	.043	.070	.195	-.098	.133
‘In many respects dogs are better than people’	<b>.655</b>	.081	-.070	.072	-.278	-.072	-.047
‘Feel deep connection with dog’	<b>.653</b>	-.202	.062	.123	-.033	.016	.106

Table 4 (continued)

	Components						
‘Dog loves me more than any other person’	<b>.638</b>	.123	-.014	.140	-.189	.049	-.082
‘Dog has saved my life’	<b>.637</b>	.204	.065	.125	-.088	-.137	-.197
‘If bad day, glad to come home to dog’	<b>.636</b>	-.114	-.010	-.035	.037	-.121	.347
‘Love to shower dog with affection’	<b>.627</b>	-.261	.009	-.017	.092	.004	.132
‘Dog is not my whole life, but makes life whole’	<b>.627</b>	-.178	.032	.010	.013	-.062	-.001
‘Truly love dog’	<b>.625</b>	-.231	-.052	-.022	.013	-.101	.235
‘Dog licks face when I get home’	<b>.624</b>	.105	-.046	-.072	.052	.020	-.111
‘Know dog loves me.’	<b>.619</b>	-.251	-.062	.041	-.057	.073	.257
‘Give dog kisses when I greet him’	<b>.608</b>	.006	-.032	.034	.032	.048	-.231
‘Prefer company of dog to company of people’	<b>.607</b>	-.068	.044	.076	-.215	.015	-.017
‘Having a dog makes my life happier’	<b>.606</b>	-.193	-.039	-.018	.009	-.093	.220
‘Dog has more love and compassion than people’	<b>.605</b>	-.093	-.071	.146	-.295	.084	.069
‘People say I go overboard for dog’	<b>.601</b>	.199	-.001	-.197	.061	.089	-.221
‘Dog sometimes sleeps same bed that I’	<b>.596</b>	-.027	.064	-.045	-.077	-.130	-.145
‘Sometimes talk baby talk to my dog’	<b>.593</b>	.009	-.183	-.216	-.068	.168	.004
‘Dog is only person loves me consistently’	<b>.592</b>	.234	.068	.171	-.266	-.041	-.124
‘I like my dog, but would never say it is my child’	<b>-.587</b>	.292	-.070	.052	.153	.054	.174
‘Devastated if dog dies’	<b>.586</b>	-.262	-.046	-.047	.052	-.031	.063

Table 4 (continued)

	Components						
‘Although I like dog prefer company of people’	<b>-.584</b>	.236	-.048	.049	.301	.085	.294
‘Dog can tell that I really love him’	<b>.582</b>	-.185	-.088	.037	.016	.007	.295
‘Good things happened because of dog.’	<b>.580</b>	.128	-.021	.097	.148	-.089	.022
‘Dog brightens my day’	<b>.580</b>	-.087	.000	.037	.074	-.084	.343
‘Dog makes me feel good.’	<b>.573</b>	-.231	.027	.003	.146	-.029	.248
‘Seems dog is smarter than people’	<b>.562</b>	.079	.040	.231	-.183	.050	-.123
‘Would die for dog’	<b>.558</b>	-.024	.009	.008	-.087	-.071	-.293
‘If dog lost, would do anything to get him back’	<b>.557</b>	-.280	.017	.003	.010	.004	.165
‘People told me I pay too much attention to dogs’	<b>.551</b>	.287	-.005	-.216	.046	.032	-.138
‘Dog loves me.’	<b>.551</b>	-.185	-.056	.150	-.073	.076	.285
‘There’s something wrong with people who don’t like dogs’	<b>.551</b>	.015	-.071	-.034	-.252	.022	.024
‘Choose between friend and dog difficult choice’	<b>.536</b>	.151	.082	.024	-.085	-.112	-.081
‘Hold dog like a sleeping baby’	<b>.534</b>	.279	-.123	-.104	.045	-.154	-.174
‘Consider dog to be like a member of family’	<b>.527</b>	-.385	-.007	-.061	.029	.022	.088
‘Skip social events to get home and take care of dog’	<b>.525</b>	.049	.059	-.068	-.069	.219	-.270
‘People joke about much care and attention I give dog’	<b>.525</b>	.179	.014	-.127	.092	.093	-.215
‘Friend or relative referred to me as dogs mommy or daddy’	<b>.521</b>	-.046	-.023	-.048	.074	.221	-.063
‘If dog dies, would feel like losing family member’	<b>.515</b>	-.341	-.016	.032	.026	.032	-.062

Table 4 (continued)

	Components						
‘Benefits of having a dog outweigh the drawbacks’	<b>.514</b>	-.209	-.018	-.045	.076	-.065	.307
‘Devastated if something bad happen to dog’	<b>.511</b>	-.245	-.068	-.111	.078	-.061	.167
‘If could, would like to provide place to live for homeless dogs’	<b>.508</b>	-.048	-.137	-.053	-.166	-.022	.027
‘People might say I spent too much taking care of dog’	<b>.507</b>	.242	.047	-.231	.040	.103	-.161
‘Choose between paying rent or mortgage and paying surgery’	<b>.504</b>	.109	.014	-.062	.034	-.241	-.188
‘Never consider moving someplace that not allow dogs’	<b>.500</b>	-.136	.078	.011	-.074	-.069	.137
‘Refer myself as mommy or daddy’	.499	-.023	-.043	-.076	-.053	.149	-.136
‘Use nickname for dog’	.495	-.109	-.068	-.137	.079	.159	.019
‘Feel a psychic connection with dog’	.495	.189	.006	.126	-.095	.163	-.162
‘Important dog does not feel lonely’	.491	-.146	.039	-.020	.116	-.051	.000
‘Hard to get close to people who don’t like dogs’	.488	-.018	-.010	-.090	-.118	-.032	-.117
‘Dog sleeps in bedroom at night’	.486	-.142	-.071	-.048	-.010	-.040	-.052
‘People come first is my motto’	-.482	.296	-.051	-.008	.056	.173	.310
‘Really glad to have dog.’	.477	-.366	.090	.020	.163	-.037	.277
‘World a better place if people had good qualities of dogs’	.467	-.155	-.082	.006	-.108	.096	.094
‘Leave social events early to get home and take care of dog’	.464	-.032	.018	-.114	.018	.261	-.209
‘Plan ahead to have free time to spend with dog’	.464	.097	.029	.037	.208	-.063	-.092
‘Understand what dog is thinking’	.463	.045	-.036	.288	-.018	.072	-.093

Table 4 (continued)

	Components						
‘Sometimes let dog sit on chair or couch’	.459	-.222	-.008	-.055	-.070	.052	-.040
‘Can often read dogs thoughts’	.451	.142	.012	.220	-.090	.167	-.083
‘Celebrate dogs birthday’	.434	-.016	.025	-.023	.247	.165	-.136
‘When dog dies, I consider buying a tombstone’	.433	.253	.003	.094	.007	-.111	-.078
‘Wished could run shelter for dogs’	.432	.211	-.186	-.020	-.173	-.046	-.030
‘Family and friends think I spend too much time on dog’	.423	.249	.104	-.193	.122	.098	-.097
‘Leave work get home and spend time with dog’	.422	.243	-.043	.043	.166	.171	-.261
‘Hurt dogs feelings when people don’t respond well to him’	.421	.074	-.117	-.004	.018	.212	-.137
‘Take dog places as much as I can’	.417	.134	.125	.340	.242	-.043	.078
‘Needs of people should come first before dogs’	-.417	.271	-.063	.104	.059	.083	.364
‘Enjoy playing games with dog at home’	.416	-.217	.041	.156	.198	.018	.130
‘If won the lottery, would give money to help neglected animals’	.415	.015	-.120	-.073	-.090	-.068	-.003
‘Dog is beautiful’	.413	-.301	-.041	.176	.067	.121	.161
‘When choosing friends, consider if get along with dog’	.405	.348	.121	.067	-.024	-.041	-.102
‘Dog very unhappy when I am away’	.402	.012	.025	-.012	-.069	.127	.084
‘Go on trip, prefer to take dog with me’	.401	.093	.060	.160	.159	-.141	.047
‘Often talk with friends about dog’	.399	-.003	.044	.128	.189	.257	-.078
‘Don’t think it is a good idea to be strict with dogs’	.388	.351	-.055	-.071	-.171	-.209	.034

Table 4 (continued)

	Components						
'Dogs in extended family considered cousins'	.384	.122	-.148	-.043	.045	.282	-.209
'Pictures of dog at work'	.376	.145	-.140	.002	.125	.167	-.295
'Dog is intelligent'	.372	-.155	.051	.332	.055	-.037	.068
'Uncomfortable to eat in front of dog when he is hungry'	.369	.215	-.011	-.101	.006	-.107	-.075
'Cut work short to get home and take care of dog'	.364	.228	-.030	-.028	.110	.164	-.276
'Pictures of dog displayed in house'	.363	.016	-.109	.036	.211	.150	-.200
'Dog has lots of toys'	.361	-.161	.019	.012	.244	.155	-.026
'Dislike way friends treat their dogs'	.356	.020	.206	.036	-.197	.144	-.056
'When dog dies, plan to bury him in special place'	.355	.170	-.024	.154	.081	-.157	-.012
'Dog is loyal'	.354	-.288	-.054	.326	-.016	.115	.231
'Sometimes feed dog from table.'	.352	-.010	-.019	-.047	-.145	.195	-.128
Often give dog treats	.344	-.177	.049	-.051	.207	.016	-.075
'Sensed something wrong with no clear outward sign'	.344	-.080	.071	.120	.014	.205	-.200
'Conflict with people who don't understand dogs'	.344	.274	.147	-.034	-.073	.059	-.079
'Probably enjoy taking care of dogs in animal hospital'	.335	.269	-.191	-.025	-.028	-.139	.046
'Afford it, take dog to doggy daycare'	.334	.194	-.217	-.133	.182	.057	.045
'Often have conversations about dogs'	.333	-.049	-.068	.184	.136	.329	-.097
'Dog has special place to sleep at night'	.321	-.103	-.130	-.061	.249	-.095	.162

Table 4(continued)

	Components						
‘Dog eats from the table’	.311	.235	.051	-.123	-.028	.133	-.079
‘Look for pet-friendly hotels when traveling’	.309	.241	.062	.162	.159	-.215	-.080
‘When send cards, sometimes sign dogs name’	.305	.090	-.050	.002	.102	.289	-.202
‘Dog has baby blankets and pillows’	.295	.160	-.082	-.115	.258	.025	-.219
‘Give treats that are not healthy for dog’	.285	.038	.017	-.015	-.190	.228	.118
‘Sometimes prepare special food for dog’	.272	.097	-.077	-.017	.250	.098	-.217
‘Considered buying insurance for dog’	.269	.146	.061	.006	.128	-.067	-.051
‘Important that friends like my dog’	.202	.183	-.152	-.056	.190	-.022	.097
‘Authorities contacted me about my dog’	.024	<b>.943</b>	-.043	.026	-.019	-.117	.130
‘Dog has been in trouble with law’	-.024	<b>.907</b>	-.004	.023	.027	-.135	.121
‘Recognize I have too many dogs’	-.009	<b>.848</b>	-.112	-.078	-.071	-.097	.117
‘Thought dog would be taken from me’	.020	<b>.820</b>	.022	.062	.025	-.119	.021
‘Dog flunked out obedience training’	-.036	<b>.803</b>	-.088	-.032	.029	-.066	.015
‘People think I do not take good care of dog’	-.052	<b>.787</b>	-.089	-.039	-.034	.005	.107
‘Dog goes without meals because unable to feed him’	-.015	<b>.778</b>	-.051	.093	-.131	-.047	.029
‘Subscription to dog magazine’	.066	<b>.776</b>	-.076	.080	.112	-.067	-.048
‘Dog has participated in dog shows’	-.057	<b>.742</b>	.003	.144	.126	-.083	-.041
‘Taken out dog in doggy stroller’	.038	<b>.698</b>	-.051	-.035	.099	-.076	-.147

Table 4 (continued)

	Components						
'Neighbors have complained about dog'	-.034	<b>.688</b>	.098	-.025	.005	.020	.074
'Dog has injured one person, but it was not dogs fault'	.028	<b>.667</b>	.288	.124	-.101	-.010	.178
'Dog causes me a lot of trouble'	-.211	<b>.659</b>	-.062	-.159	-.047	.032	.114
'Dog has attended obedience classes by different instructors'	-.173	<b>.650</b>	-.053	.124	.273	.000	-.032
'Dog has hurt people, but it was their fault'	.008	<b>.645</b>	.324	.112	-.057	.032	.174
'Dog has bitten me badly, but he did not mean to'	.122	<b>.641</b>	.099	.068	-.112	.011	.090
'Dog doesn't care much about me'	-.223	<b>.628</b>	-.054	.013	.024	-.014	-.033
'Dog has hurt some people.'	-.040	<b>.627</b>	.322	.103	-.068	-.033	.053
'People complained dog has unpleasant smell'	-.078	<b>.619</b>	-.079	-.184	-.123	.188	.235
'People complained about dogs urine or feces'	.035	<b>.615</b>	-.099	-.395	-.010	-.030	.129
'People told me should get rid of dog'	-.064	<b>.581</b>	.226	-.074	.044	.093	.115
'Probably lost potential friends because of dog'	.249	<b>.573</b>	.144	-.091	.036	-.091	.016
'People described dog as vicious.'	-.006	<b>.564</b>	.390	.097	.052	-.012	.007
'Disobeyed minor laws or legal regulations'	.131	<b>.541</b>	.120	.023	-.018	.136	.088
'Dog never barks at anyone'	-.182	<b>.539</b>	-.260	.173	.203	-.241	-.030
'Dog is not particularly good looking'	-.165	<b>.523</b>	-.048	.081	-.048	.009	-.051
'Car has dog bumper stickers'	.214	<b>.522</b>	-.090	-.008	.046	.003	-.166
'Dog annoys people by slobbering on them'	-.048	<b>.513</b>	-.008	-.049	.034	.295	.188



Table 4 (continued)

	Components						
‘Been injured by my dog’	.041	<b>.512</b>	.219	.043	-.058	.114	.052
‘Hardly ever discuss dog with people’	-.135	<b>.511</b>	-.009	-.141	-.080	-.249	.217
‘Dog can be dangerous sometimes’	-.101	<b>.509</b>	.450	.122	.017	.035	.075
‘Dog has enough to eat and drink’	.065	<b>-.505</b>	.044	-.045	.172	.079	.137
‘Hardly give dog treats’	-.210	<b>.500</b>	-.121	.054	-.197	-.027	.111
‘People complained house smells different’	-.023	.493	-.037	-.146	-.063	.324	.165
‘No dog hair on furniture in house’	-.041	.485	-.081	-.052	.211	-.421	.189
‘If dog loses control of bladder, I would put him to sleep’	-.040	.484	-.040	.147	-.110	.041	.440
‘Dog has damaged objects belonging to others’	-.044	.481	.036	-.134	.105	.269	.064
‘Dog drools on people’	.007	.478	-.061	-.036	.020	.302	.201
‘Compared to others, dog isn’t very bright’	-.160	.464	-.055	-.191	.034	.081	.160
‘Have gone hungry to buy food for dog’	.216	.449	-.021	.091	-.077	.044	-.127
‘Unfair complaints about dog’	.041	.420	.329	-.131	.120	.210	.131
‘People commented house isn’t clean due to dog’	.072	.407	-.015	-.230	-.038	.281	.138
‘Cannot see myself having less than three dogs’	.145	.401	-.045	.077	-.059	.056	-.193
‘Have more than two dogs’	.010	.398	-.055	-.004	-.145	.077	-.053
‘If dog disfigured, would put him to sleep’	.013	.395	-.075	-.090	-.096	-.088	.349
‘Leaving dog alone does not bother me’	-.337	.394	-.031	.045	-.030	.074	.248

Table 4 (continued)

	Components						
'Buy expensive foods for dog'	.256	.387	.006	.019	.187	-.029	-.260
'Feed dog ordinary food'	.039	.377	-.104	.075	-.337	.012	.217
'Dog has attended obedience classes.'	-.169	.377	-.026	.191	.362	.057	-.017
'Sometimes taken dog places where the laws do not allow dogs'	.237	.374	.166	.110	-.002	.168	.001
'Important to be patient with dog'	.231	-.372	-.009	.093	.079	.128	.131
'Dog has different outfits'	.252	.341	-.139	-.047	.210	-.055	-.281
'Disagreements or misunderstanding with friends and family about dog'	.168	.324	.159	-.096	-.052	.197	.074
'Friends or relatives complained about dog'	.093	.323	.275	-.302	.049	.251	.176
'Dog never gone without meal'	-.011	-.317	-.053	-.217	.269	-.184	.011
'Dog had traumatizing life before I got him'	.057	.292	.097	-.044	-.043	.015	.039
'Dog never gone without water'	.033	-.278	-.063	-.152	.259	-.176	.068
'Leave dog in kennel, but never for more three days'	.039	.259	-.065	-.087	-.044	-.211	.178
'Doubt I would ever put dog to sleep'	.208	.245	.047	.113	.102	-.204	-.232
'Silly to bury pets in pet cemeteries'	-.207	.222	-.110	-.075	-.019	.153	.119
'Dog has sweet disposition toward everybody'	.071	.111	<b>-.773</b>	.084	-.068	.005	.166
'Dog can be hostile toward some people'	.036	.203	<b>.759</b>	.013	.026	.010	.017
'Dog can act pretty mean'	.030	.262	<b>.657</b>	-.004	.088	.015	.029
'Dog has threatened people'	.037	.263	<b>.651</b>	.083	-.015	.051	.120
'No one has expressed fear of dog'	.103	.217	<b>-.648</b>	-.144	.063	-.259	.012

Table 4 (continued)

	Components						
‘Dog never growls at people’	-.082	.288	<b>-.641</b>	-.023	.030	-.114	.130
‘People are afraid of my dog’	-.110	.099	<b>.625</b>	.112	.011	.227	.133
‘Dog is friendly’	.052	-.059	<b>-.586</b>	.283	-.002	.209	.247
‘Dog growls at people often’	.073	.257	<b>.584</b>	-.055	.072	-.025	.056
‘No one would describe dog as mean’	.206	.067	<b>-.563</b>	.038	-.061	-.108	.227
‘Dog is affectionate toward people’	.002	-.043	<b>-.553</b>	.238	.001	.149	.245
‘Dog is gentle toward people’	.103	-.074	<b>-.530</b>	.321	.016	.210	.180
‘Dog likes children’	-.064	.025	-.490	.308	-.001	.209	.240
‘Dog has never injured anyone’	.021	-.266	-.386	-.046	.008	-.063	.058
‘Dog has never hurt or scared a child.’	.166	-.052	-.354	.075	-.064	-.126	.100
Defended dog from criticism by people who don’t understand’	.203	.097	.352	-.141	.066	.168	.075
‘Dog gets along with other animals’	.036	.072	-.340	.250	.081	.019	.030
‘Dog gets nervous around children’	.152	.269	.327	-.274	.090	-.050	.015
‘Admit friends and family disliked coming to house’	.058	.166	.315	-.310	.101	.220	.109
‘Dog often barks when people come to door’	.148	-.255	.262	-.229	-.085	.194	.105
‘Dog is well-disciplined’	.098	.097	-.062	<b>.731</b>	.070	-.072	-.013
‘Dog is very well behaved’	.178	.135	-.096	<b>.706</b>	.066	-.084	.076
‘Dog always obeys me promptly’	.071	.309	.034	<b>.700</b>	.090	-.149	.125
‘Dog often disobeys me’	.086	.239	-.021	<b>-.660</b>	-.078	.051	.102

Table 4 (continued)

	Components						
‘Dog always does what I say’	.064	.229	-.098	<b>.630</b>	.047	-.098	.064
‘Dog goes outside when I tell him to’	.013	.015	-.063	<b>.555</b>	.200	.062	.070
‘Must admit dog is hard to control’	-.001	.292	.116	<b>-.508</b>	.015	.122	.142
‘Dog is well house-trained’	.083	-.271	.086	.436	.117	.113	.134
‘Dog has caused me embarrassment’	.007	.266	.052	-.409	.029	.254	.153
‘Dog has accidents in house’	.032	.105	-.009	-.387	-.104	.072	-.084
‘Let dog take car rides because he likes it’	.345	.053	.155	.383	.265	-.047	.062
‘People get irritated because something dog has done’	.059	.316	.224	-.334	.065	.161	.178
‘Dog barks a lot at people’	.145	.024	.258	-.330	-.175	.145	.109
‘Friends are happy to see my dog’	.117	-.128	-.261	.308	.133	.053	-.003
‘See vet once a year’	-.130	-.246	-.021	-.121	<b>.577</b>	.018	-.021
‘Dog groomed and clipped at least every two months’	-.057	.034	-.022	.030	<b>.562</b>	-.247	-.055
‘Brush dogs teeth’	-.127	.239	.016	.226	<b>.555</b>	-.097	-.060
Take great care of dogs health	.072	-.203	.186	.101	<b>.531</b>	-.130	.019
‘Keep up vaccinations for dog’	-.059	-.300	.011	-.060	<b>.524</b>	.116	.051
‘Take dog out for walks three times a week’	.046	.003	.023	.146	<b>.513</b>	.003	.021
‘Bathe dog once a month’	-.109	.112	-.029	.124	<b>.503</b>	-.247	.000
Careful to pick up droppings on walks	-.129	-.125	-.078	-.020	.476	.044	.019
‘Don’t spend energy cleaning or grooming dog’	.080	.341	-.079	-.071	-.446	.140	.184
‘Brush dog once a week’	-.086	.102	.099	.245	.445	-.087	-.067

Table 4 (continued)

	Components						
Droppings picked up every day or two	.055	-.008	.011	.032	.443	-.090	-.013
'Buy special food or toys for dogs teeth'	.114	-.083	.072	.149	.433	.009	.035
'Regularly give dog vitamins or supplements'	-.142	.195	.045	.322	.416	.015	-.152
'Haven't looked after dogs needs very well.'	.051	.370	-.019	-.028	-.390	.213	.159
'Give dog vitamins or supplements'	-.123	.280	.051	.337	.380	.032	-.093
'Dog helps me meet new people'	-.011	.194	-.158	.295	.343	.254	.072
'When sick, dog gets daily routine'	.059	-.172	.014	-.120	.338	-.157	-.007
'Think should groom dog more often'	.152	.172	-.004	-.099	-.338	.228	.187
'Dog has special chair or couch'	.166	.208	.017	.040	.268	.006	-.076
'Admit sometimes I raise my voice to dog'	-.036	-.250	.066	-.030	-.206	<b>.570</b>	.067
'Sometimes yell at dog'	-.080	-.021	.065	-.077	-.231	<b>.522</b>	.040
'Dog punished for taking food he wasn't supposed to'	-.157	.020	.063	.046	-.020	<b>.519</b>	.002
'I never get angry with dog'	.084	.471	-.094	.152	.258	<b>-.503</b>	.144
'Dog damages furniture or objects in house'	-.131	.151	-.021	-.264	.038	.485	-.007
'Dog chews up objects that shouldn't'	-.132	.170	-.052	-.204	-.013	.485	.009
'Door has scratch marks from dog'	-.112	.098	.109	.045	-.030	.469	.034
'Dog causes me extra work'	-.156	.123	.050	-.228	.001	.455	.106
'Dog has taken food from table when he wasn't supposed to'	.120	.054	-.065	-.249	-.078	.437	.036

Table 4 (continued)

	Components						
‘Changed or cancelled travel plans because of dog’	.218	.045	.077	-.037	.039	.433	-.285
‘Often have dog hair on clothes’	.162	-.132	.088	-.003	-.079	.420	-.046
‘Dog drips saliva on furniture or peoples clothes’	.016	.341	-.040	-.006	-.032	.419	.133
‘Dog chewed personal belongings during last two months’	-.115	.215	-.015	-.146	.039	.371	.001
‘Give presents to dog on special occasions ‘	.333	-.204	-.141	-.014	.141	.354	-.106
‘Like to play rough with dog’	.180	.222	.149	.232	-.031	.325	.089
‘Get together with friends, end up talking about dogs’	.308	.051	-.065	.139	.135	.319	.058
‘Think it is important to be strict with dogs’	-.204	.051	.084	.162	.080	.270	.209
‘If dog were terminally ill, I would put him to sleep’	-.084	-.020	-.001	-.005	-.012	.127	<b>.566</b>
‘If dog had serious illness, I would put him to sleep’	-.047	.222	-.038	-.003	-.013	-.030	<b>.504</b>
‘Dog fine by himself when I am gone’	-.164	.170	-.151	.089	-.031	.016	.379
‘Choose between paying surgery or putting him to sleep’	-.144	.282	-.028	-.011	-.083	.137	.375
‘Carry pictures of dog in wallet or purse’	.303	.150	.077	.156	.116	.118	-.324
‘Often cook for dog’	.136	.194	.009	.094	.232	-.025	-.275
‘Consider putting dog in kennel if leaving town for a long time’	-.196	.062	-.088	-.150	-.041	.103	.235

Table 5: ADOBE-I Scales with Items and Factor Loadings of Items in Study 1.

N=352		
ADOBE scale	Item	Factor loading
1. Dog Owner Bond	My dog is one of the most important sources of affection and love in my life.	.773
	My dog is one of my best friends.	.760
	My life wouldn't be nearly so happy without my dog.	.735
	My dog is my favorite person.	.720
	I have difficulty imagining life without a dog.	.694
	Caring for my dog gives me a reason to get out of bed each day.	.686
	My life feels fuller because I have a dog.	.684
	If I am away from my dog for a very long time, I really miss him/her.	.677
	My dog is the only one that makes me completely happy.	.688
	My dog always makes me feel better.	.668
	I try to spend as much time with my dog as possible.	.657
	I feel a deep connection with my dog.	.653
	My dog loves me more than any other person.	.638
	If I have a bad day, I am glad to come home to my dog.	.636
	I love to shower my dog with affection.	.627

Table 5 (continued)

ADOBE Scale	Item	Factor loading
	I truly love my dog.	.625
2. Legal Problems	Authorities such as police or animal control officers have sometimes contacted me about my dog.	.943
	My dog has been in trouble with the law.	.907
	I recognize I have too many dogs.	.848
	There has been at least one occasion when I thought that my dog would be taken from me and put in the pound.	.820
	My dog flunked out of dog obedience training.	.803
	Some people think I do not take good care of my dog.	.787
	My dog sometimes goes without meals because I am unable to feed him.	.778
	My neighbors have complained about my dog.	.688
	My dog has injured at least one other person, but I don't think it was my dog's fault.	.667
	My dog causes me a lot of trouble.	.659
	My dog has attended different obedience classes taught by different instructors.	.650
	My dog has bitten me badly, but I know he did not mean to.	.641
	Some people have complained that my dog has an unpleasant smell.	.619



Table 5 (continued)

ADOBE Scale	Item	Factor loading
	Some people have complained about my dog's urine or feces.	.615
3. Hostile Dog	My dog has a sweet disposition toward everybody.	-.773
	My dog can be pretty hostile toward some people.	.759
	My dog can sometimes act pretty mean.	.657
	My dog has threatened some people.	.651
	No one has ever expressed any fear of my dog.	-.648
	My dog never growls at people.	-.641
	Some people are afraid of my dog.	.625
	My dog is very friendly.	-.508
4. Obedient Dog	My dog is well-disciplined	.731
	My dog is very well behaved.	.706
	My dog always obeys me promptly.	.700
	My dog often disobeys me.	-.660
	My dog always does what I say.	.630
	My dog goes outside immediately when I tell him/her to.	.555
	I must admit my dog is sometimes hard to control.	-.508
5. Care for dog's health	My dog sees the vet at least once each year.	.577
	My dog is groomed or clipped at least once every two months.	.562
	I brush my dog's teeth.	.555

Table 5 (continued)

ADOBE Scale	Item	Factor loading
	I take great care of my dog's health.	.531
	I carefully keep up the vaccinations for my dog.	.524
	Someone in my house takes my dog out for walks at least three times each week.	.513
	I bathe my dog at least once each month.	.503
<b>Supplemental scale</b>		
6. Dog as child	I consider my dog to be almost like my child.	.767
	I sometimes talk baby talk to my dog.	.593
	Although I like my dog, I would never say that I feel like he or she is my "child."	-.587
	When I hold my dog, I hold him like a sleeping baby.	.534
	I consider my dog to be almost like a member of my family.	.527
	A friend or relative has sometimes referred to me as my dog's "mommy" or "daddy."	.521

Table 6: Descriptive and Reliability Statistics for ADOBE-I scales in Study 1.

N=352						
<i>ADOBE Scales</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Coefficient <math>\alpha</math></i>	<i>Mean Inter- Item Correlation</i>
1. Dog-Owner Bond	3.86	.693	1.19	5.00	.930	.522
2. Legal Problems	1.56	.637	1.00	4.71	.929	.517
3. Hostile Dog	2.09	.862	1.00	4.50	.874	.342
4. Obedient Dog	3.62	.811	1.00	5.00	.885	.434
5. Care for Dog's Health	3.83	.657	1.86	5.00	.726	.197
<b>Supplemental scale</b>						
S1. ADOBE-1 Dog as Child	3.54	.791	1.33	5.00	.744	.338

Table 7: Demographic Information for Participants in Study 2

<b>Gender</b>	<i>Percentage</i>
Male	34.4
Female	64.6
No response	1.0
<b>Ethnicity</b>	
Non-Hispanic White	82.3
Hispanic/Latino	8.3
Black/African American	4.2
Native American	2.1
Asian American/Pacific Islander	1.0
Other	2.1
<b>Marital Status</b>	
Single	43.8
Married	42.7
Divorced	8.3
Widowed	3.1
No response	2.1
<b>Number of dogs presently own</b>	
One	63.5
Two	24.0
Three	6.3
Four	1.0
Five	1.0
Six	1.0
Seven	1.0
Eight	1.0
No response	1.0
<b>Place where dog was obtained</b>	
Pet shop	11.5

Table 7 (continued)

<b>Place where dog was obtained</b>	<i>Percentage</i>
Animal Shelter	36.5
Breeders	18.8
Friends/Relatives	22.9
Other	9.4

Table 8: Descriptive statistics and Internal Reliability for ADOBE-1, PAS, Miller-Rada, CENSHARE, MDORS, Big Five, and UCLA Loneliness Scale in Study 2.  
N=96

Scale	<i>Mean</i>	<i>Std. deviation</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Coefficient <math>\alpha</math></i>	<i>Mean Inter- Item Correlation</i>
1. ADOBE-I Dog-Owner Bond	4.07	.687	1.69	5.00	.939	.522
2. ADOBE-I Legal Problems	1.45	.620	1.00	4.00	.932	.517
3. ADOBE-I Hostile Dog	2.15	.723	1.00	3.88	.792	.342
4. ADOBE-I Obedient Dog	3.74	.702	1.29	5.00	.836	.434
5. ADOBE-I Care for Dog's Health	3.85	.557	2.43	5.00	.598	.197
6. ADOBE-1 Dog as Child	3.52	.815	1.00	5.00	.744	.338
7. PAS	4.23	.567	1.89	5.00	.910	.389
8. Miller-Rada	1.70	.741	1.00	4.00	.938	.620
9a. CENSHARE- Maintenance	3.95	.547	2.38	5.00	.864	.300
9b. CENSHARE-Intimacy	3.76	.591	2.18	4.64	.774	.228
10a. MDORS- Dog owner interaction	3.65	.553	1.66	4.56	.703	.227
10b. MDORS-perceived emotional closeness	3.91	.687	1.60	5.00	.884	.477
10c. MDORS-perceived costs	1.95	.655	1.11	4.33	.866	.416
11a. BFI Openness	3.67	.527	2.40	4.70	.752	.251
11b. BFI Conscientiousness	3.87	.604	2.33	5.00	.796	.308

Table 8 (continued)

Scale	<i>Mean</i>	<i>Std.</i> <i>deviation</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Coefficient</i> <i>α</i>	<i>Mean Inter-</i> <i>Item</i> <i>Correlation</i>
11c. BFI Extraversion	3.01	.909	1.13	5.00	.895	.514
11d. BFI Agreeableness	3.88	.596	2.56	5.00	.791	.304
11e. BFI Neuroticism	2.67	.840	1.13	4.38	.860	.433
12. UCLA Loneliness	2.58	.758	1.15	4.35	.953	.505

Note: The Assessment of Dog Owners' Behaviors and Experiences, Version I (ADOBE-I); the Pet Attitude Scale (PAS); Miller-Rada Commitment to Pets Scale (Miller-Rada); Monash Dog Owner Relationship Scale (MDORS); CENSHARE Pet Attachment Survey (CENSHARE); Big Five Inventory (BFI); Revised UCLA Loneliness Scale (RULS).

Table 9: Inter-correlations of ADOBE-I Scales in Study 2.

N=96

<i>ADOBE Scales</i>	<i>Dog-Owner Bond</i>	<i>Legal Problems</i>	<i>Hostile Dog</i>	<i>Obedient Dog</i>	<i>Care for Dog's Health</i>	<i>Dog as Child</i>
1. Dog-Owner Bond	1.00					
2. Legal Problems	-.207*	1.00				
3. Hostile Dog	-.156	.428**	1.00			
4. Obedient Dog	.157	-.138	-.134	1.00		
5. Care for Dog's Health	.304**	-.066	-.035	.413**	1.00	
<b>Supplemental Scale</b>						
S1. ADOBE-1 Dog as Child	.539**	-.063	-.015	.020	.323**	1.00

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



Table 10: Concurrent validity of ADOBE-I Scales in Study 2. N=96

	<i>PAS</i>	<i>Miller- Rada</i>	<i>CENSHARE- Maintenance</i>	<i>CENSHARE- Intimacy</i>	<i>MDORS- Dog Owner Interaction</i>	<i>MDORS- Perceived Emotional closeness</i>	<i>MDORS- Perceived costs</i>
<b>ADOBE-I Scales</b>							
1. Dog-Owner Bond	.637**	-.336**	.642**	.765**	.379**	.678**	-.483**
2. Legal Problems	-.494**	.630**	-.357**	-.299**	-.261*	-.249	.464**
3. Hostile Dog	-.269**	.332**	-.248*	-.193	-.218*	-.240*	.386**
4. Obedient Dog	.164	-.177	.419**	.186	.271**	.203*	-.429**
5. Care for Dog's Health	.194	.051	.501**	.317**	.314**	.243*	-.174
<b>Supplemental scale</b>							
S1. Dog as Child	.587**	-.194	.541**	.591**	.460**	.477**	-.257*

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

N=96

Note: Pet Attitude Scale (PAS); The Assessment of Dog Owners' Behaviors and Experiences, Version I (ADOBE-I); Miller-Rada Commitment to Pets Scale (Miller-Rada); Monash Dog Owner Relationship Scale (MDORS); CENSHARE Pet Attachment Survey (CENSHARE)

Table 11: Correlations between time of dog ownership (in months) and the Pet Attitude Scale and the CENSHARE Scale in Study 2. N=96

<b>Scale</b>	<b>Time (in months)</b>
ADOBE-I Dog-owner Bond	.158
ADOBE-I Dog as Child	.034
PAS	.170
CENSHARE-Maintenance	.086
CENSHARE-Intimacy	.130

*\*\*.* Correlation is significant at the 0.01 level (2-tailed).

Table 12: Correlations between ADOBE-I Scales and UCLA Loneliness Scale in Study 2. N=96

	Dog- Owner Bond	Legal Problem s	Hostile Dog	Obedient Dog	Care for Dog's Health	Dog as Child
UCLA Loneliness Scale	.013	.077	.145	-.461**	-.307**	-.062

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 13: Correlations between ADOBE-I Scales and the Big Five in Study 2.

ADOBE-I Scales	N=96				
	<i>Openness</i>	Conscientiousness	Extraversion	Agreeableness	Neuroticism
1. Dog-Owner Bond	.280**	-.079	.131	.314**	-.003
2. Legal Problems	-.283**	-.127	-.009	-.217*	.054
3. Hostile Dog	-.217*	-.157	-.091	-.139	.095
4. Obedient Dog	.006	.310**	.410**	.283**	-.384**
5. Care for Dog's Health	.147	.207*	.232*	.260*	-.141
<b>Supplemental scale</b>					
S1. Dog as Child	.078	-.070	.238*	.149	-.030

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

\**. Correlation is significant at the 0.05 level (2-tailed).*

Table 14: Items of ADOBE-2 Scales Related to Legal Problems

Scale	Item
Involvement With Legal Authorities	<p>Authorities such as police or animal control officers have sometimes contacted me about my dog.</p> <p>There has been at least one occasion when I thought that my dog would be taken from me and put in the pound.</p> <p>My dog has been in trouble with the law.</p>
Injuries Caused by Dog	<p>My dog has hurt some people.</p> <p>My dog has injured at least one other person, but I don't think it was my dog's fault.</p> <p>My dog has bitten me badly, but I know he did not mean to.</p> <p>My dog can be dangerous sometimes.</p>
Display of Dog	<p>My car has dog bumper stickers.</p> <p>I have a subscription to a dog magazine.</p> <p>My dog has participated in dog shows.</p> <p>I buy expensive foods, such as steaks for my dog.</p> <p>I have taken out my dog in a doggy stroller.</p>
Suspected Neglect	<p>I recognize I have too many dogs.</p> <p>Some people think I do not take good care of my dog(s).</p> <p>My dog sometimes goes without meals because I'm unable to feed him.</p> <p>My neighbors have complained about my dog.</p>

Table 15: Correlations Among the Scales Developed in Study 3: Involvement with Authorities, Injuries Caused by Dog, Suspected Neglect, and Display of Dog. Study 1 Dataset ( $N = 352$ ).

<b>Scale</b>	<b>Involvement with Authorities</b>	<b>Injures Caused by Dog</b>	<b>Suspected Neglect</b>	<b>Display of Dog</b>
Involvement with Authorities	1.00			
Injuries Caused by Dog	.678**	1.00		
Suspected Neglect	.827**	.661**	1.00	
Display of Dog	.702**	.554**	.671**	1.00

*\*\*.* Correlation is significant at the 0.01 level (2-tailed).

Table 16: Correlations of the Involvement with Authorities Scale, Injuries Caused by Dog Scale, Suspected Neglect Scale and Display of Dog Scale With ADOBE-1 Scales in Study 1 data ( $N = 352$ ).

Scale	Involvement with Authorities	Injures Caused by Dog	Suspected Neglect	Display of Dog
Dog- Owner Bond	-.149**	-.142**	-.185**	.068
Legal Problems	.912**	.777**	.927**	.717**
Hostile Dog	.308**	.522**	.333	.213**
Obedient Dog	-.131*	-.213**	-.227**	-.010
Care for Dog's Health	-.137**	-.176**	-.214**	.030
Dog as a Child	-.099	-.109*	-.126*	.120*

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

\**. Correlation is significant at the 0.05 level (2-tailed).*

Table 17. Correlations of new scales (Involvement with Authorities, Suspect Abuse, and Injuries Caused by Dog) with ADOBE-1 scales in Study 2 Dataset.  $N = 96$

<b>Scale</b>	<b>Involvement with Authorities</b>	<b>Injures Caused by Dog</b>	<b>Suspected Neglect</b>
Dog- Owner Bond	-.106	-.293**	-.200
Legal Problems	.901**	.763**	.947**
Hostile Dog	.324**	.364**	.422**
Obedient Dog	-.005	-.219*	-.032
Care for Dog's Health	-.009	-.091	-.031
Dog as a Child	-.046	-.112	-.059

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

\**. Correlation is significant at the 0.05 level (2-tailed).*



Table 18: Correlations of New Scales (Involvement with Authorities, Suspect Abuse, and Injuries Caused by Dog) and the ADOBE-1 Legal Problems Scale, with Other Measures of Dog-Owner Relationships in the Study 2 dataset. ( $N = 96$ ).

Scale	ADOBE Legal Problems	Involvement with Authorities	Suspected Neglect	Injuries Caused by Dog
CENSHARE- Maintenance	-.357**	-.256*	-.330**	-.354**
CENSHARE-Intimacy	-.299**	-.245*	-.281**	-.261*
Miller-Rada	.630**	.506**	.541**	.623**
MDORS- Dog Owner Interaction	.261*	.235*	.275**	.213*
MDORS-Perceived Emotional Closeness	-.380*	-.311**	-.374**	-.343**
MDORS-Perceived Costs	.464**	.331**	.389**	.411**

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

\**. Correlation is significant at the 0.05 level (2-tailed).*

Table 19: ADOBE-2 Scales with Items

ADOBE scale	Item
1. Dog Owner Bond	<p>My dog is one of the most important sources of affection and love in my life.</p> <p>My dog is one of my best friends.</p> <p>My life wouldn't be nearly so happy without my dog.</p> <p>My dog is my favorite person.</p> <p>I have difficulty imagining life without a dog.</p> <p>Caring for my dog gives me a reason to get out of bed each day.</p> <p>My life feels fuller because I have a dog.</p> <p>If I am away from my dog for a very long time, I really miss him/her.</p> <p>My dog is the only one that makes me completely happy.</p> <p>My dog always makes me feel better.</p> <p>I try to spend as much time with my dog as possible.</p> <p>I feel a deep connection with my dog.</p> <p>My dog loves me more than any other person.</p> <p>If I have a bad day, I am glad to come home to my dog.</p> <p>I love to shower my dog with affection.</p> <p>I truly love my dog.</p>
2. Involvement with Authorities	<p>Authorities such as police or animal control officers. have sometimes contacted me about my dog.</p>

Table 19 (continued)

ADOBE scale	Item
3. Injuries caused by Dog	There has been at least one occasion when I thought that my dog would be taken from me and put in the pound.
	My dog has been in trouble with the law.
	My dog has hurt some people.
	My dog has injured at least one other person, but I don't think it was my dog's fault.
4. Suspected neglect	My dog has bitten me badly, but I know he did not mean to.
	My dog can be dangerous sometimes.
	I recognize I have too many dogs.
	Some people think I do not take good care of my dog(s).
5. Hostile Dog	My neighbors have complained about my dog.
	My dog sometimes goes without meals because I'm unable to feed him.
	My dog has a sweet disposition toward everybody.
	My dog can be hostile toward some people.
	My dog can act pretty mean.
	My dog has threatened some people.
	No one has ever expressed any fear of my dog.
	My dog never growls at people.
	Some people are afraid of my dog.

Table 19 (continued)

ADOBE scale	Item
	My dog is very friendly.
6. Obedient Dog	My dog is well-disciplined.
	My dog is very well behaved.
	My dog always obeys me promptly.
	My dog often disobeys me.
	My dog always does what I say.
	My dog goes outside immediately when I tell him/her to.
	I must admit my dog is sometimes hard to control.
7. Care for dog's health	My dog sees the vet at least once each year.
	My dog is groomed or clipped at least once every two months.
	I brush my dog's teeth.
	I take great care of my dog's health.
	I carefully keep up the vaccinations for my dog.
	Someone in my house takes my dog out for walks at least three times each week.
	I bathe my dog at least once each month.
8. Dog as child	I consider my dog to be almost like my child.
	I sometimes talk baby talk to my dog.
	Although I like my dog, I would never say that I feel like he or she is my "child."

Table 19 (continued)

ADOBE scale	Item
	When I hold my dog, I hold him like a sleeping baby.
	I consider my dog to be almost like a member of my family.
	A friend or relative has sometimes referred to me as my dog's "mommy" or "daddy."
9. Display of Dog	My car has dog bumper stickers.
	I have a subscription to a dog magazine.
	My dog has participated in dog shows.
	I buy expensive foods, such as steaks for my dog.
	I have taken out my dog in a doggy stroller.

## Curriculum Vita

Paola N. Balcazar Soto was born and raised in Mexico City, Mexico, where she graduated from La Salle del Pedregal High School in 2008. At the age of 18, she and her family migrated to the United States. Paola completed her Bachelor's degree in Psychology with a minor in Criminal Justice at the University of Texas at El Paso in 2012. The Fall of 2013, she entered The University of Texas at El Paso master's program in Clinical Psychology. In the course of her time at the University of Texas at El Paso, Paola has maintained her high grade standing while working as a teaching assistant and as the undergraduate advisor for the Psychology Department. Paola also took several classes from the Counseling Department. Her goal is to get Licensure as a Professional Counselor (LPC) and practice in a private or non-profit setting.

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