

# Design Research Review

## Summary

The main insight we gathered from all three participants is the importance of maintaining personal interaction with their dogs. Thus, there seems to be little need or want for a design that automates the process of care. Moreover, none of the participants seemed interested in tracking health-related matters for their dogs and instead focused on the behaviors surrounding socialization. Anxiety, loneliness, excitement or nervousness with other people and dogs and territorial issues were some of the main problems that the participants brought up. Therefore, we found this problem space of socialization to be a common thread among our participants.

## Introduction of Methods

After our initial check-in, we conducted two more studies. However, instead of semi-structured interviews, we focused on gathering information through personal inventories and observations of dog and owner interaction. Moreover, we studied a more generalized group of dog owners invested in their dogs' wellbeing (as opposed to professional trainers that own dogs). Thus, we learned more about our target participant needs. The structure of our research included a semi-structured interview followed by a personal inventory/touchstone tour. For one of the participants, we were also able to conduct a contextual inquiry. We observed basic routine interactions such as feeding, putting on harnesses and clothes, and dog walking.

## Participants

### **Participant 1 (P1):**

We conducted a semi-structured interview with retired Research Assistant P1 who adopted her first dog 16 years ago. P1's dog at the time had poor socialization, so she trained the dog to stay calm in the presence of new people. Due to the success of training this dog, P1 became a certified dog trainer and now owns 4 dogs with the oldest being 13.5 years old. We met P1 on Wednesday, January 23 at Cafe Solstice and discussed topics ranging from maintaining the health and happiness of her dogs of all ages to positive dog training practices. In particular, she touched on clicker training, using social media to help monitor her dogs' waste, and avoiding collars to prevent choking or aggravating the dog. P1's perspective is unique because of her extensive knowledge base of training and owning dogs. P1's main focus is supporting her dogs' health and happiness as they age.

### **Participant 2 (P2):**

We observed P2, a UW computer science grad student who owns a 2-year-old Great Dane. She's grown up with dogs, but this is the first dog she has raised on her own. We completed a semi-structured interview and personal inventory of toys with P2 and the dog in their apartment on

Saturday, January 26. P2's situation is unique because she is a full-time student and cannot leave her dog alone for more than half a day. P2 is not a fan of most commercial human-dog tracking applications such as FitBark and Whistle because she believes in the importance of maintaining a strong connection with the dog, rather than relying on tracked data. She brought up a few other concerns such as her dog having territorial issues after moving into a new apartment, and she noted how being calm and consistent around her dog helps lessen her dog's anxiety. Moreover, she was looking into leashes that wouldn't cause too much tension when being pulled to avoid aggravating her dog. P2's main concern seems to focus on socializing her dog and maintaining a level of energy around her dog to lessen anxiety.

### **Participant 3 (P3):**

We conducted a semi-structured interview, personal inventory, and contextual inquiry with P3, a college professor with experience raising dogs since she was young. She currently has 2 dogs, both of which are a mixed breed, the older dog being a 3-year-old, medium-sized dog and the younger one being a 2-year-old, small chihuahua mix. We met P3 in her house on Saturday, January 26, discussed topics related to P3 and her dog's daily routines and health concerns, along with observing the living environment of the dogs and their interaction with P3. P3's perspective is unique because both of her dogs tend to be nervous around other dogs and people. P3's main concerns are to keep her dogs happy and calm and to make sure other people are comfortable.

## **Design Research Themes**

### **Concerns about Socialization**

One common theme mentioned by all participants is socialization. The participants are consistently concerned by their dogs' interactions with other dogs and unfamiliar humans. Depending on the novel stimuli, the dogs will respond with varying feedback. For example, many of our participants' dogs presented symptoms of nervousness in response to interacting with territorial, aggressive dogs. Nervousness and discomfort were also commonly present in situations involving unthoughtful people who stare or pet dogs without acknowledging the dogs' temperaments. Dogs show nervousness through yawning, barking, and licking their lips. Our participants hope that by presenting their dogs with a wider variety of experiences, they will learn how to safely respond to new stimuli. As dogs are social creatures, this process is also critical for general happiness.

### **Little Interest in Food/Health Tracking Devices**

Another important observation is that health tracking monitors are actually unpopular with general dog owners. None of our participants have used pet health tracking monitors before and none of them expressed an interest in these kinds of devices for their dogs after we mentioned them. They believe that they know their dogs well enough, considering all the time they have spent together, and will be able to detect the potential physical/emotional problems through personal interaction with their dogs. Compared to health data, they would like to pay more attention to their dogs when interacting with them.

## Use Dog Services Only When Necessary

We found that our participants use dog services including vets and dog walkers, but rarely due to the high cost. For example, they only take dogs to the vet when the dogs are sick. It also appears that the participants tend to rely more on their own networks, such as family and friends, when they need dog care.

## Understand the Dog Needs Well

All three participants mentioned the importance of maintaining a strong connection to their dog. Part of the daily routine includes reading the dog's body language to determine when the dog is hungry or feeling unwell. In addition, the participants thoroughly researched the products they provided their dogs with, such as different types of collars and leashes.

Participants P1 and P2 especially noted the significance of maintaining a calm or happy voice when interacting with their dogs. This can limit anxiety when learning new skills and also reduce stress in potentially dangerous situations. Ultimately, reducing owner stress works to maintain happiness and calmness of the dog.

## Task Analysis Questions

### 1. Who is going to use the design?

Our target users are general dog owners who care about their dogs' wellbeing. Specifically, our design targets owners concerned with socializing their dogs with other dogs and humans. The dogs are at least 5 months old and have already been introduced to and are comfortable with a variety of sounds, smells, and sensations.

### 2. What tasks do they now perform?

- Owners already check in with their dogs every day to make sure that the dogs are happy and healthy.
- They do personal research on their dogs, through online searching and asking pet store workers for advice on products that will not aggravate their dogs.
- They are always consciously aware of potential outdoor situations that might be anxiety-inducing for their dog. Thus, they maintain a calm demeanor and avoid provoking situations (ex. crossing the street when seeing a cat).
- Owners understand when their dogs have social needs and are experiencing problems. Specifically, when their dog is in a social situation, the owner is able to discern playful behavior from aggression/anxiety.

### 3. What tasks are desired?

The majority of participants expressed the following desires:

- Ways to calm the dogs down when they are nervous
- Ways to avoid improper socializing
- Providing opportunities to safely introduce a dog to a new situation (person or other dogs)
- Identifying and maintaining positive dog-to-dog relationships

#### **4. How are the tasks learned?**

Many of the tasks are learned through observation and spending time with their dogs. There does not appear to be a pattern of learning their dogs' behaviors through formal tracking and sensing. Thus, our design should not automate the learning process but should assist the interactions and observations for positive socialization from dog to owner.

#### **5. Where are the tasks performed?**

The tasks are performed at home (indoors and backyard), parks, dog parks, playgrounds, and walkways in the neighborhood.

#### **6. What is the relationship between the person and the data?**

Right now, most of the data surrounding the dogs are not formally recorded but rather are a part of the owners' personal knowledge. Moreover, data appear to be personal to the dog owners, but there's potential in sharing the data with other dog owners. However, the relationship between dog and owner is continuously changing as owners learn more about how their dogs socialize.

#### **7. What other tools does the person have?**

Owners have tools to help their dogs with socialization such as treats to calm them down and lessen distress. They may also use leashes to remove dogs from provoking situations. Furthermore, owners use their own knowledge (either self-knowledge or by talking to others) and access to search engines to help care for their dogs.

#### **8. How do people communicate with each other?**

Currently, some participants communicate with knowledgeable pet store workers or other dog owners via talking and/or Facebook groups. They also use text messaging to contact family members or friends caring for the dog.

#### **9. How often are the tasks performed?**

Dog owners check-in with their dogs emotional and physical well-being on a daily basis. However, active socialization does not occur as frequently, perhaps once a week or even less, as it may create stress.

#### **10. What are the time constraints on the tasks?**

Time constraints for more active tasks depend on the breed, age, and health condition of the dog. For instance, P2's dog tires of walks after 30 minutes. Engagement in tasks also seems to be constrained by daily owner responsibilities apart from caring for their dogs (ie. school, work, etc.). Because owners may be busy, it will be beneficial for our design to not take additional time out of an owner's day but rather integrate itself into an already pre-existing routine or task (ie. walking, scheduling play dates, etc.).

#### **11. What happens when things go wrong?**

When the dogs do not have enough socialization with other dogs, they experience nervousness, oversensitivity, uncomfortableness around other dogs and may have physical reactions, including fighting and biting. When a dog is removed from social situations for extended periods of time, it may feel loneliness.

When the dogs do not have enough experience socializing with humans, they can easily be nervous when interacting with strangers, which will lead to biting people and affecting the dogs' mental health.