Canine Functional Analysis of Dog-Directed Reactivity

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INTRODUCTION

Canine Functional Analyses

- **Functional analysis (FA) methodology may be extended to evaluating dog behavior problems** (Dorey et al., 2012; Feuerbacher et al., 2016; Hall et al., 2015; Mehrkam et al., 2020; Pfaller-Sadovsky et al., 2019; Waite & Kodak, 2021; Winslow et al, 2018)
- **Guardians can be taught to implement FA conditions with their dogs** and FAs may yield clearer, more valid outcomes when guardians implement FA conditions (Hall et al., 2015; Pfaller-Sadovsky et al., 2019; Waite & Kodak, 2021)
- **Behavior Skills Training (BST) can be used to teach others to implement FA conditions** both in-person and online (Martens et al., 2019; Rios et al., 2020; Wacker et al., 2013)
- **Only one FA of dog problem behavior manipulated the presence of another dog in FA conditions** (Winslow et al., 2018)

Purpose

- **To evaluate the function of a canine's dog-directed reactivity** defined as whining, growling, or barking in the presence of another dog while oriented toward that dog
- **To provide remote BST to teach guardians to implement FA conditions**
- **For guardians to implement FA conditions with their dog** with live, remote coaching from a Board Certified Behavior Analyst

Participants & Setting:

- **Dog:** Daisy, a 2.5 year old, spayed female American pit bull mix
- **Dog Guardians:** Amy & James
- **Setting:** Fenced-in yard on a farm in the Southwest United States

METHODS

- **Preparation:** Guardian interview, observation via previously recorded videos, & development of FA conditions
  - Single-function tests to evaluate two functions:
    - Escape from another dog
    - Access to another dog
- **Behavior Skills Training for guardians:** Written instructions, video model, evaluation of procedural integrity when guardians implemented FA conditions with fake dogs, and feedback on practice implementation
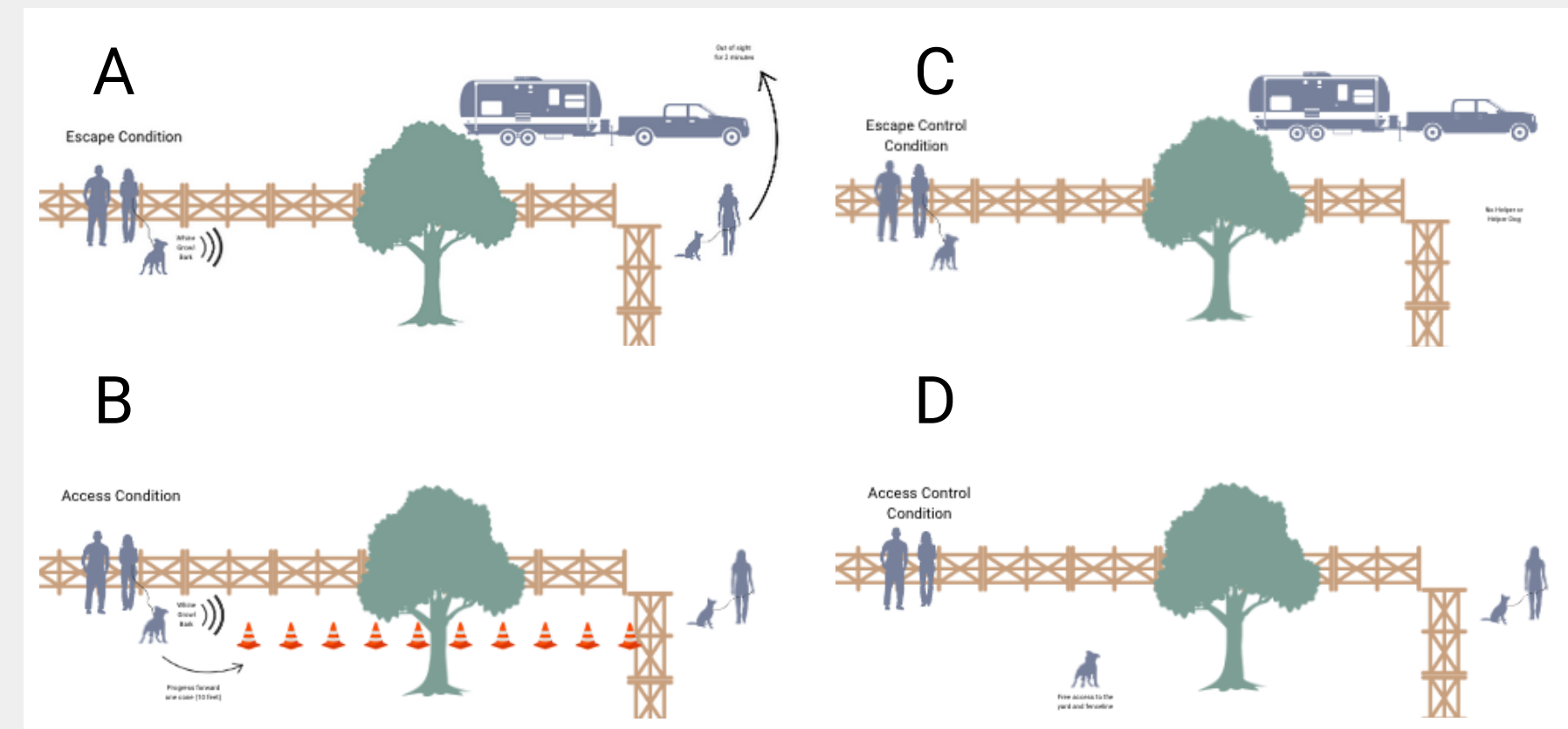- **Implementation of single function test for escape** (Day 1) **and for access (**Day 2)

Figure 1. Visual depiction of planned functional analysis conditions including the single function FA for *escape from another dog*, and the single function FA for *access to another dog*. The test conditions for escape and access are represented in panels A and B respectively. The control conditions for the escape and access functions are represented in panels C and D respectively.
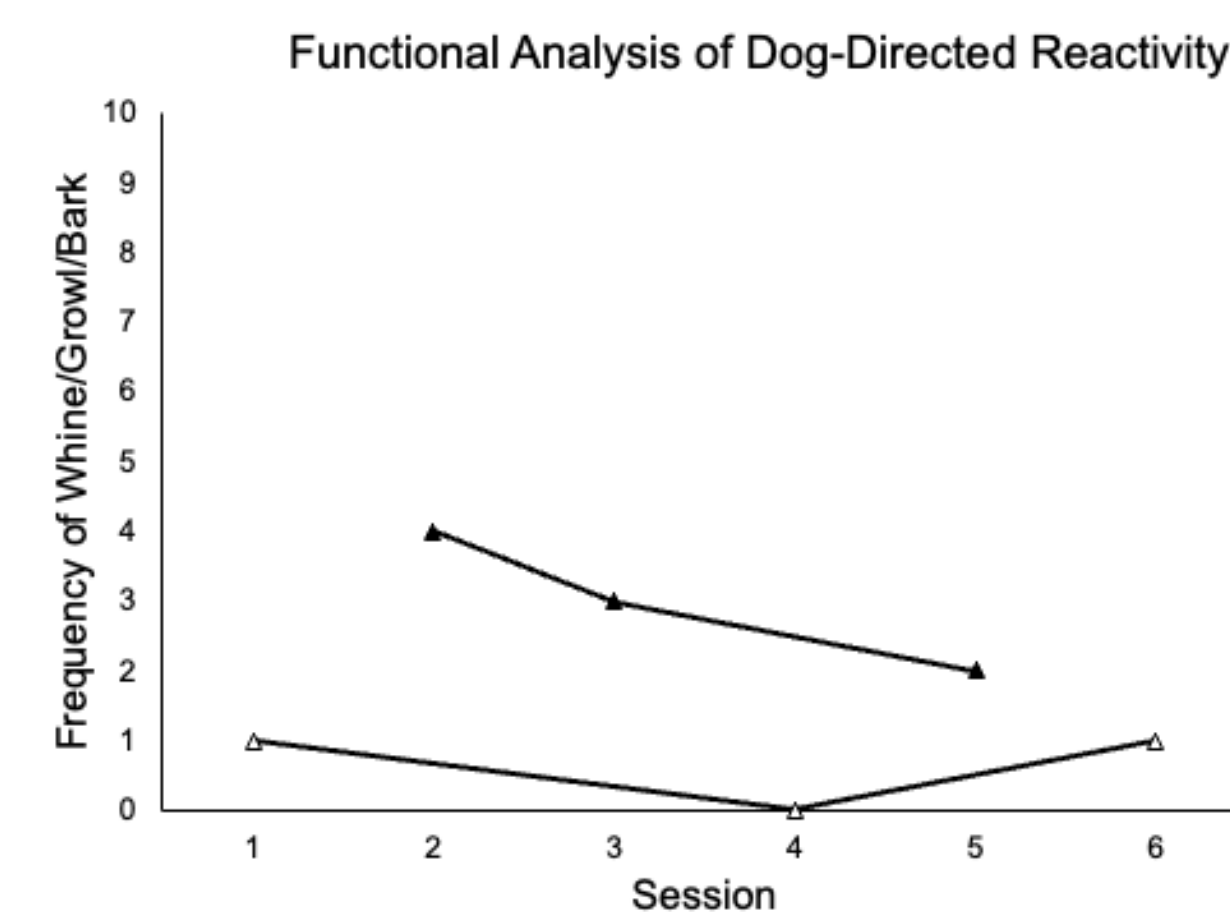
RESULTS

Figure 2. Single-function FA to evaluate the function of escape from another dog.

- **Escape:** Moderate levels with low variability and a decreasing trend
- **Control:** Low levels with low variability and no trend

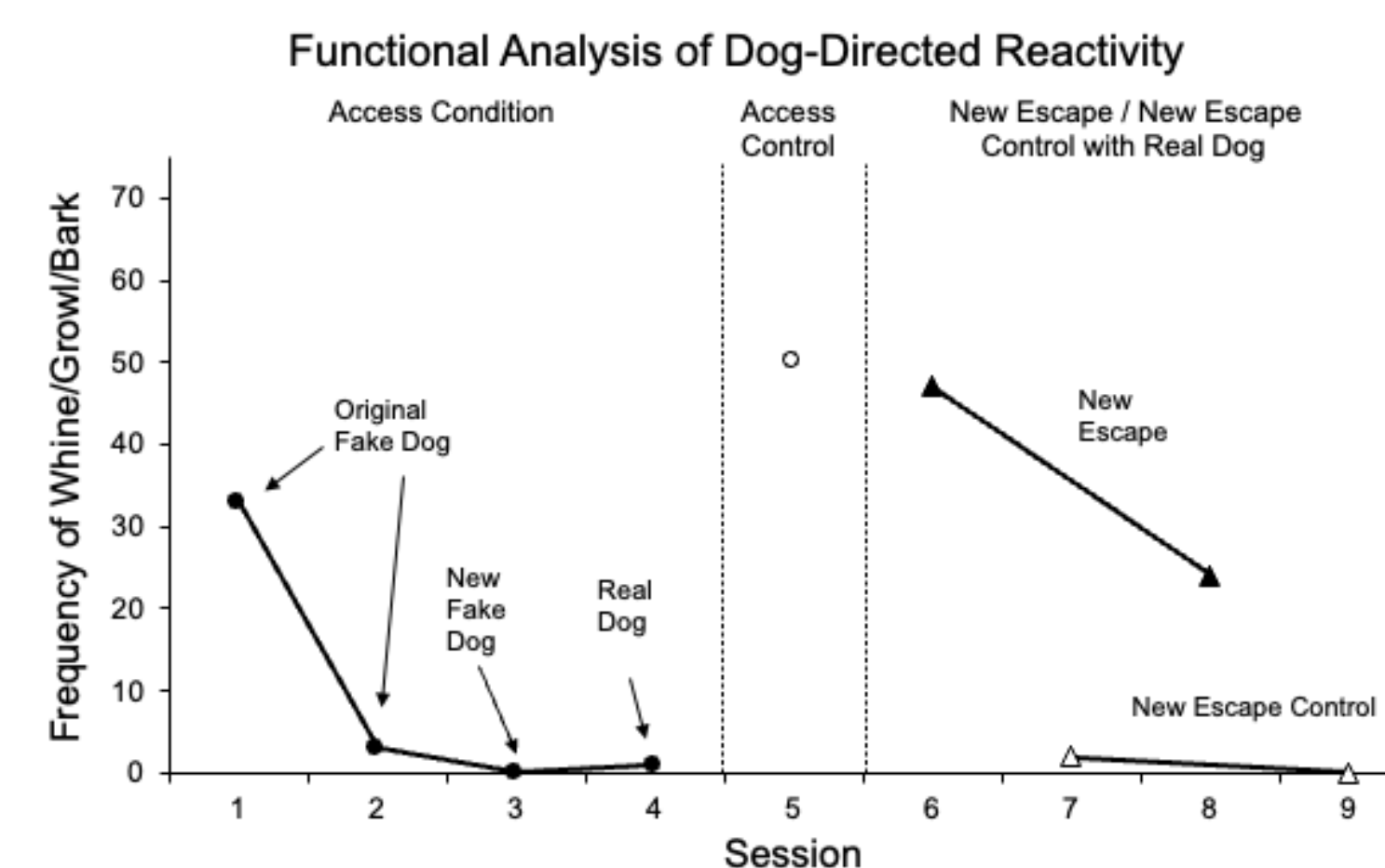**Differentiated data paths support an *escape from dogs* function**

Figure 3. Single function FA to evaluate the function of access to another dog. Due to trends in the data, a new single function FA to retest the escape from another dog function was completed

- **Access:** High to low levels of responding with moderate variability and a decreasing trend across two fake and one real dog
- **Access Control:** One session had high levels of responding suggesting this condition may have functioned as an escape extinction condition
- **New Escape:** High to moderate levels of responding with moderate variability
- **New Escape Control:** Low levels of responding with low variability

Differentiated data in the new escape FA support an *escape from dogs* function

DISCUSSION

Findings

- **Successful identification of the function** of Daisy's reactive behaviors **as escape from another dog.**
- **Successful implementation of BST** to train guardians to conduct FA remotely with coaching from a BCBA. Procedural integrity averaged 97.5% across FA conditions

Limitations

- **Fake dog may not evoke or elicit the target response** in natural settings
  - However, the **use of real dogs presents safety and ethical concerns**
- **Could not rule out access function** due to procedural limitations
- **No treatment data** were included to verify the function

Future Research

- **Evaluate alternative or additional stimuli associated with dogs** that could be manipulable in FA conditions
- **Consider alternative measures for response classes** such as reactivity
- **Implement & evaluate function-based treatments** to confirm FA results

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