Treatment Analysis as an Alternative to a Functional Analysis for a Dog Jumping on Visitors

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INTRODUCTION

- Common advice for a jumping dog is to turn away to avoid reinforcing the behavior
  - **Risk of side effects** of extinction or punishment
  - Does not take into account the function of the behavior
  - Does not teach alternative behavior
- **Identifying the function through direct analysis** would lead to more effective intervention (Dorey et al., 2012; Mehrkam et al., 2020; Waite & Kodak, 2021)
- Conducting a functional analysis would involve **reinforcing challenging behavior** which may present safety and ethical concerns; response-independent treatment (non-contingent reinforcement, NCR) could confirm a hypothesis of the behavioral function without reinforcing target behavior
- **Response-independent schedules have been used to successfully decrease target behaviors in humans** (Ingvarsson & Fernandez, 2023), but much of the research with dogs has been isolated to the use of edible reinforcers (Fernandez et al. 2022; Pfaller-Sadovsky et al., 2023; Protopopova & Wynne, 2015)

Purpose
To implement two potential treatments - **response-independent attention** and **response-independent escape** - in order to verify the **function of jumping on visitors**.

Subject & Background
- Rose, spayed female Poodle x Wheaton Terrier mix. ~40 lbs
- When visitors arrived at the home, Rose **approached them with her tail wagging**, while **emitting a variety of stress signals**.
- Her **jumping on visitors was dangerous** for children and elderly parents who frequently visited the home.

Target Behavior: Jumping on visitors
- Front paws come off the ground while within 1 ft of visitor. One instance was complete when both front paws returned to ground. Front paws may or may not make contact with visitor. Hind paws may or may not also leave the ground.

Baseline
- Two videos (1 min & 5 min) of Rose responding to visitors
- Average IRT across both videos was 10 sec

METHODS

Treatment Analysis
- Trials for each condition were 1 min long. The treatment (attention or escape) was provided for 3 seconds every 7 seconds.
- After each trial the experimenter left the house, waited for 30 seconds, then returned to start the next trial.
- All sessions were video recorded and jumping behavior was counted.

Attention condition: Experimenter called Rose and petted her body, speaking to her in an excited tone (similar to natural environment)

Escape condition: Experimenter did not interact with Rose at all, and turned to face the wall
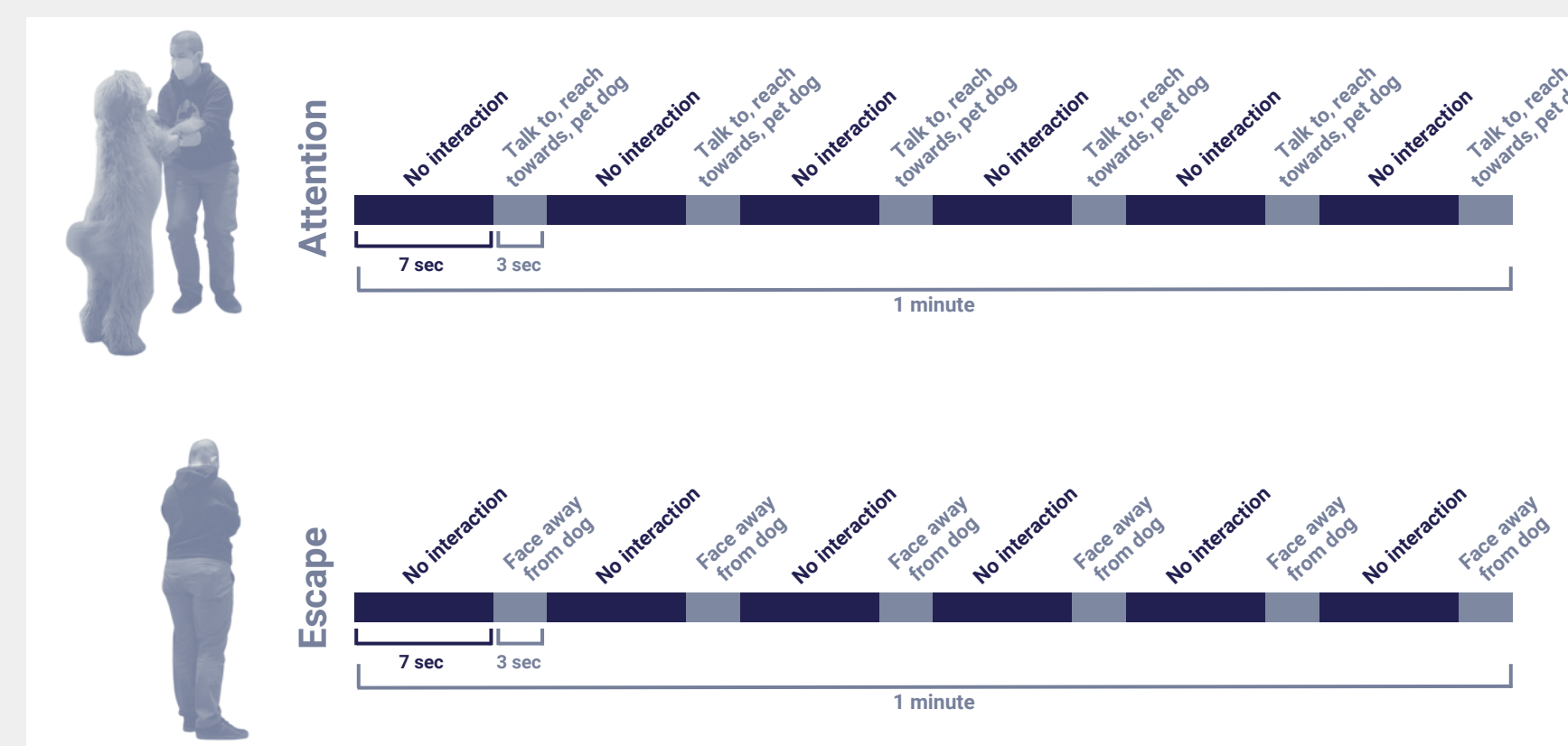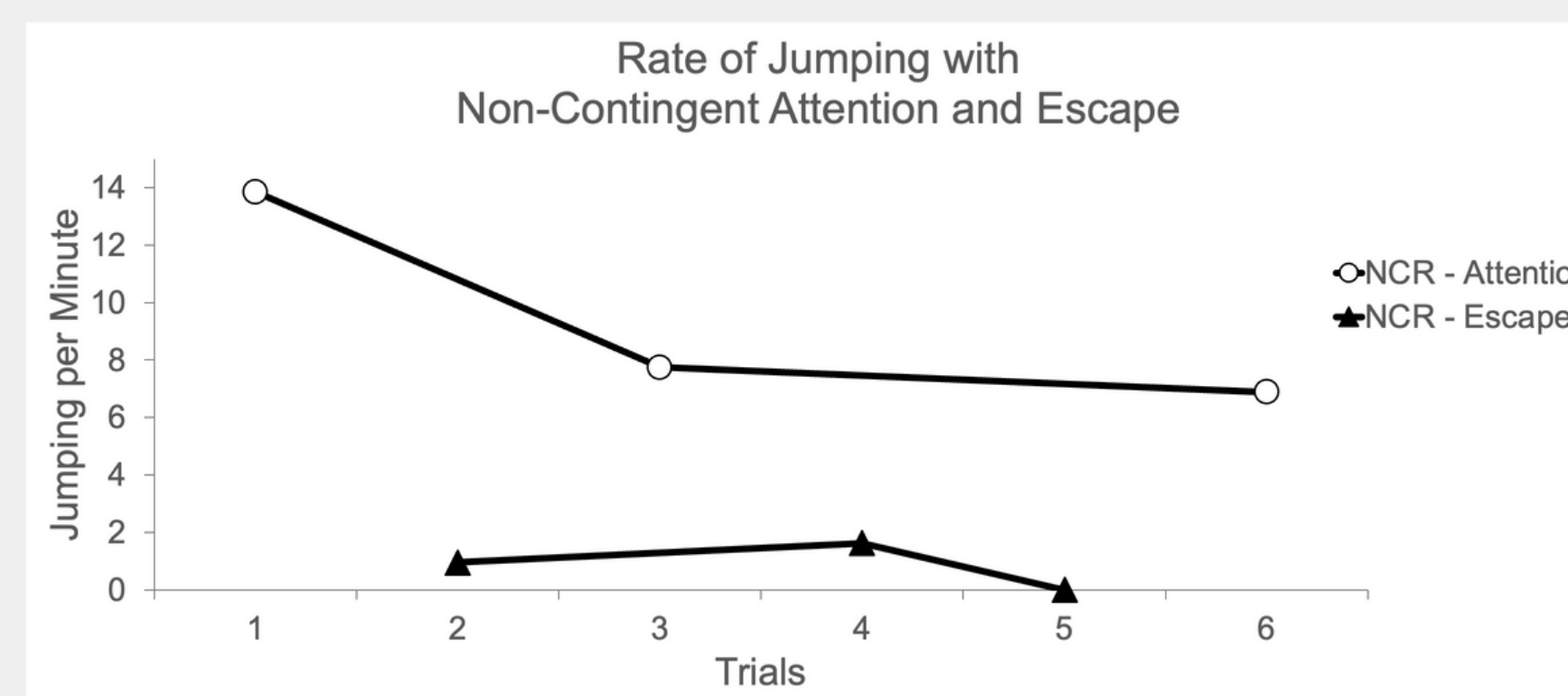

RESULTS

Figure 1. Jumping per minute in response-independent attention and escape conditions with a visitor in the house. Each condition was implemented across 3 trials. In the escape condition, jumping occurred at low levels with low variability and a decreasing trend. In the attention condition, jumping occurred at high levels with moderate variability and a decreasing trend. Because the consequence was provided on a dense schedule, the behavior should occur at lower rates in the condition that provides the functional reinforcer.

CONCLUSIONS

- Rose's jumping behaviors are **maintained by escape**.
- It is unlikely that Rose's jumping functions to solicit attention

DISCUSSION

- Treatment analysis showed **clear differences in jumping behaviors** between conditions without actually providing reinforcement for challenging behavior.
- Implementing response-independent reinforcement with the hypothesized reinforcers may be an **efficacious and ethical alternative to a functional analysis** for problem behavior.

Future research & Limitations
- Consider **who is serving as the "visitor"**
  - There may be cases where the analysis would be better conducted with a frequent visitor, a family member, or a novel visitor.
- Rose's **guardian was present** for all conditions
  - It is possible that Rose's responding would have been different in the absence of her guardian.
- **Procedural integrity & interobserver agreement** data were not collected
- No **continued treatment data** were collected to confirm hypotheses
- **Generality** to other dogs and other behaviors may be limited.
- Previous research with pet dogs has demonstrated that **behaviors may be multiply controlled** (Mehrkam et al., 2020), and that dogs may have **behavioral functions unique from humans** (Waite & Kodak, 2021); this analysis did not examine other functions.

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