4-22-2022

Dogs Produce Distinctive Play Pants: Confirming Simonet

Shelly Volsche
Boise State University

Cameron Brown
Boise State University

Hannah Gunnip
Boise State University

Makayla Kiperash
Boise State University

Holly Root-Gutteridge
University of Lincoln

See next page for additional authors

Authors

Shelly Volsche, Cameron Brown, Hannah Gunnip, Makayla Kiperash, Holly Root-Gutteridge, and Alexandra Horowitz

Dogs produce distinctive play pants: Confirming Simonet

Shelly Volsche [1], Cameron Brown [1], **Hannah Gunnip** [1], Makayla Kiperash [1], Holly Root-Gutteridge [2] & Alexandra Horowitz [3]

[1] Department of Anthropology, Boise State University [2] School of Life Sciences, University of Lincoln [3] Department of Psychology, Barnard College

Do Dogs Laugh?

BACKGROUND

- Humans and nonhuman animals have co-evolved with each other
- Vocalizations in dogs can compare to human laughter
- Social contagion can contribute to understanding interspecies empathy
- Communicative species can explain the evolution of human communication

OBJECTIVES

Research Questions:

- Do dogs perform a canine-specific pant during play?
- Can human-play with dogs elicit a play-pant during training, play or rest interactions?

Hypotheses:

- If the target vocalization is domain specific (play), then it should be significantly more common during the play interaction.
- If the target vocalization is indicative of a play state, it should frequently align with play behaviors.

METHODS

- A prescreening survey captured demographic information about the guardian, the dog
- 16 accepted pairs were fitted with wireless microphones, transmitters, and a harness, while a camera captured video during training, play, and shared rest interactions
- Independent raters examined audio and video recordings across interactions using an ethogram, and an audio analysis software called RavenLite
- Target Vocalizations in the spectrogram were time-stamped, and characterized by being 0 to 4 kHz, between 0.1 to 0.3 seconds in length, had large and irregular oscillating waveforms with high amplitudes and did not contain harmonic bands
- Raters used the time-stamped vocalizations to analyze dog and human behavior within the video

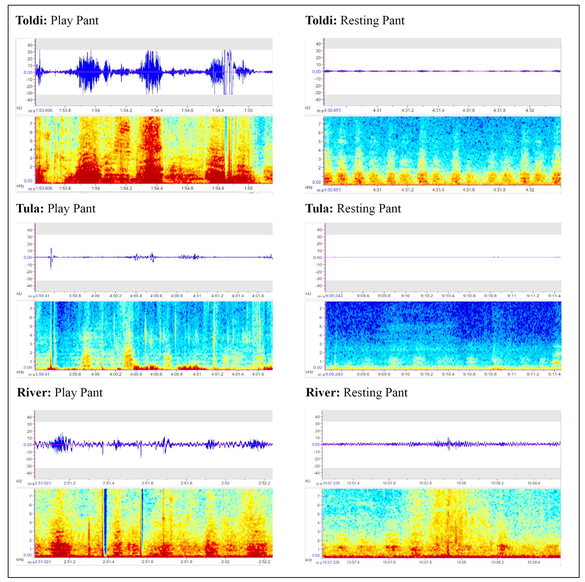

Figure 1. The comparison of play and resting pants for three participating dogs. The dark, large, red bursts on the play pants (left) occur more irregularly than during a resting pant (right), which is small, and appears to achieve the same frequency and timing.

PILOT DATA

- An average of Rater 1 and 2's auditory counts totaled 353 target vocalizations, with 330 occurring during a play behavior or activity
- A one-way ANOVA resulted in significant differences regarding the presence of vocalizations during the three interactions ($F_{2, 39} = 5.897$, $p=0.006$)
- A Tukey post hoc test revealed significantly fewer pants observed in trained (0.875 ± 1.30 min, $p=0.018$) and shared rest (0.875 ± 1.60 min, $p = 0.013$) compared to play interactions (20.63 ± 29.14 min)

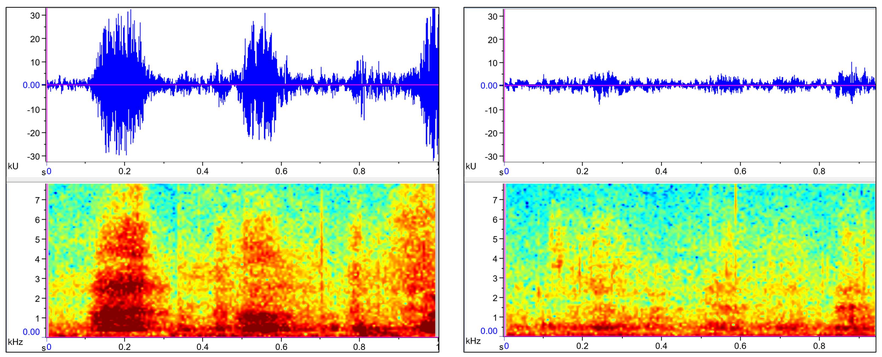

Figure 2. Spectrogram generated from Simonet et al.'s (2001) pant as published on PeTalk.org. The dark areas aligning with bursts of the oscillogram (left) show the presence of a forced, breathy exhalation. Which was used to define a play pant. The spectrogram (right) shows a regular pant, lacking breathy exhalations.

CONCLUSIONS

- This pilot study has validated previous findings of a canine-specific play pant [1,2]
- When interacting with their guardians, dogs produced significantly more vocalizations during play than in other interactions. The playing behavior between humans and their dogs strongly correlated.
- Dogs are producing their own unique vocalizations (Fig 1)

Further investigation should be conducted using larger sample sizes, and a focus on relationship, playstyle, and personal history of participants

REFERENCES

1. Simonet, P., Murphy, M., & Lance, A. (2001). Laughing dog: vocalizations of domestic dogs during play encounters. In *Animal Behavior Society Conference*.
2. Simonet, P., Versteeg, D., & Storie, D. (2005). Dog-laughter : Recorded playback reduces stress related behavior in shelter dogs. *Proceedings of the 7th International Conference on Environmental Enrichment*, 1–6.

ACKNOWLEDGEMENTS

This pilot research was supported by all of the dogs and their human participation. Funding for this project was provided by the Institute for Transformative and Inclusive Scholarship for providing funds to purchase equipment.

BOISE STATE UNIVERSITY