Canine Research

Human-animal interactions of community dogs in Campo Largo, Brazil: A descriptive study

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ARTICLE INFO

ABSTRACT

Free-roaming, ownerless dogs comprise a considerable portion of Brazil's dog population. To address societal concerns for animal welfare, the Brazilian town of Campo Largo established the "community dog program," where free-roaming dogs are cared for by self-appointed community members, known as maintainers. As this program was established only 2 years ago, little is known about the interactions that take place between these dogs and people residing in these communities. Thus, the objective of this study was to describe the types of human-animal interactions observed between community dogs and humans in Campo Largo. Dog subjects (n = 7), selected by the municipality based on accessibility and community approval, were of mixed breeds, and averaged 4.0 ± 4.16 (mean $\pm$ SD) years old, ranging from 1 to 10 years old. Over an 18-day period, each dog was observed through continuous focal sampling for 6 consecutive hours on 3 separate days, with the exception of 2 dogs, Pitoco and Moranguinha, who were observed for 1 and 2 days, respectively. Interactions were presented as medians and total counts and grouped as dog initiated or human initiated. Human-initiated interactions were further distinguished as either stranger initiated and community member initiated. Of the 465 total dog-human interactions, 298 were initiated by dogs and 167 by humans. Dogs interacted with vehicles a total of 157 times. Relative frequency of dog-initiated interactions toward vehicles was much lower than those directed at humans. Although dogs approached humans a median of 9 times per 6-hour observation period, they approached vehicles 0 times per observation day. Vehicle-chasing was observed a median of 2 times per 6-hour period. Avoiding and barking at humans was observed, directed most often toward strangers who had no known previous contact with the dogs. Although humans petted, hugged, and kissed dogs, they were also seen to kick, scold, and attempt to scare them. Both community members and strangers showed affection toward dogs. Kicking was observed a total of 4 times, only performed by strangers. However, strangers were also observed to feed dogs a median of once per observation period. This descriptive study is the first documentation on the types of interactions between community dogs and humans in Campo Largo.

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Introduction

Free-roaming dogs in Brazil

Brazil is home to approximately 37 million of the estimated 500 million domestic dogs (*Canis lupus familiaris*) in the world—a considerable portion of which are free-roaming (Dantas-Torres and Otranto, 2014; Hsu et al., 2003). The term "free-roaming" is used to define domestic dogs that are generally unattended or are not under direct human control (Høgasen et al., 2013; Majumder et al., 2014). These animals can thrive as either solitary individuals or members of large social groups (Sparkes et al., 2014). However, the lives of these dogs are typically believed to be brief and harsh because of their limited access to food, water, and shelter on the streets (Amaku et al., 2010). Lack of human ownership also suggests that veterinary care is either insufficient or absent, thereby increasing their susceptibility to disease and

malnutrition, compromising welfare and reducing chances of survival (Hsu et al., 2003; Morters et al., 2014).

The community dog program in Southern Brazil

Although region-specific, Brazilian free-roaming dogs are typically found near impoverished urban areas, rural parks, and forested neighborhoods (Dias et al., 2013). One way to address the direct welfare needs of free-roaming dogs is to allow these animals to remain on the streets while tending to their basic needs through establishing them as community residents.

In the Southern Brazilian town of Campo Largo, the community dog program has been in effect since 2012. Community dogs differ from free-roaming dogs in that they are collectively cared for by community members and have been sterilized, vaccinated, and identified by the local municipal veterinarian (Høgasen et al., 2013). "Maintainers," or self-appointed members of the community, are registered with the municipal government to be legally responsible for providing basic necessities such as clean water, food, and shelter to their respective community dogs. Maintainers are also responsible for monitoring the health status of the community dog and contacting the municipal veterinarian if the animal is injured or sick. In addition, community dogs must not pose significant risk to humans and animals in their neighborhood. This alternative may have a positive impact on public health through addressing animal health issues in the region (Molento, 2014). Since its inception, the Campo Largo community program has registered more than 80 dogs in the community and is expected to increase its capacity in the coming years.

Study objectives

Although studies have been conducted on the spatial distribution of free-roaming dogs, research on their behaviors and relationships with their communities has been scant. Likewise, the concept of community dogs is relatively new to the animal population management field and has received little attention. Hence, the aim of this study was to describe the types of human-animal interactions observed between community dogs and humans in Campo Largo, Brazil.

Materials and methods

This study was approved by the UBC Animal Care Committee (Protocol # A14-0207), and by a joint cooperation term between the Federal University of Paraná and the Campo Largo municipal government.

Study site

This project took place between June and August 2014 in the town of Campo Largo in the state of Paraná, Southern Brazil (latitude: 25°27′33.1″S longitude: 49°31′21.3″W). Campo Largo's human population of approximately 1,00,000 residents is distributed across a vast geographic area of over 1 million square kilometers (IBGE, 2008). The exact size of Campo Largo's dog population remains unknown, although previous studies have estimated that approximately 25,000 dogs reside in the area (Molento, 2014).

Subjects

Data were collected from 7 community dogs (Figure 1) that were scattered across the town's district and lived in various locations within the town's residential, farm, and commercial areas. This was a convenience sample as the dogs were selected by the Campo Largo municipal government officials based on the accessibility to community study sites, and permission given by the local community members to observe the animals at the individual study sites. Details on the age, size, and sex of each subject were made available through dog profiles provided by the municipal government (Table 1). All subjects were medium to large in body size and averaged 4.0 ± 4.16 years old, ranging from 1 to 10 years old. Information regarding living conditions, access to food, water, and shelter was also provided by the municipal government. Of the 7 subjects, 3 were men and 4 were women; all were recorded as mixed breed. Subjects were spayed or neutered by the local municipal veterinarian before the study, as part of the standard registration procedure of community dogs. The maintainer of each dog was also identified through records provided by the government. Four of the dogs had a single maintainer, whereas 3 (Tigrão, Negão, and Juli) had 2 maintainers.

Housing conditions

All subjects remained on the street before and during the observation period with the exception of 2 dogs: Pitoco, who disappeared after only one observation day, and Moranguinha, who was kept inside her maintainer's house on the final day of observation. Four subjects lived in residential neighborhoods, whereas 3 lived in areas that were a mix of residential, farm, and commercial settings (Table 1). Dogs were provided water ad libitum in bowls and provided food periodically throughout each observation day by their maintainers with no intervention by the study investigators.

Behavioral observations

We undertook an initial pilot study between June 9th and June 13th, 2014. We watched 3 subjects (Negão, Pitoco, and Pretinha) to create a general behavioral ethogram. Behaviors were categorized according to dog-initiated and human-initiated interactions (Table 2).

Observations took place over 18 days between June 16th and August 12th, 2014, where each dog was observed on 3 separate days with the exceptions of Pitoco and Moranguinha. Each dog was observed for 6 hours per day, which were divided into 2 3-hour bouts (from 10:00—13:00 and 13:30—16:30). We arrived at least 10 minutes before the start of every observation day to allow people and community dogs to become acclimatized to our presence. Each subject was randomly assigned a Monday, a Tuesday, and a Friday because of limited access to study sites, except for Negão, who was observed on 2 Tuesdays and a Monday because of a bus strike which prevented our access to the study site. Contact with the subjects was minimized by remaining at least 7 meters from animals (the approximate length of a street intersection), avoiding eye contact with dogs and refraining from any form of interaction. During observations, conversation and interaction with local people were kept to a minimum. Live, continuous focal sampling was used to record all interactions during each observation period.

Behavioral grouping

Interactions were grouped into 2 major categories: dog-human interactions and dog-vehicle interactions (Table 2). Dog-human interactions were further differentiated into interactions with strangers (humans who did not live in the community) and community members. We were introduced to regular community members during our initial visits to study sites before the start of the study. Strangers were considered people who were not known to researchers or community members (as previously identified