Comparison of Tethering and Group-Pen Housing for Sled Dogs (Siberian Huskies)

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Introduction

This study investigated differences in behaviour between sled dogs based on housing methods (tethering and un-tethering) and exercise (exercise or no exercise). Research on tethering other domestic species found behavioural indicators of stress, such as increased repetitive locomotive behaviour in sheep (Wiemelsfeldt & Farish, 2004), excessive vocalizations in cattle (Watts & Stockley, 2000) and stereotypical pacing in pigs (Schouten, et al., 1991). The only study which had previously investigated sled dog behaviour (Yeon et al., 2001), found an increase of repetitive behaviours when sled dogs, that had traditionally been tethered, were released from tethers and housed in small, single pens. In this case, the small size of the pen and single-dog housing could have been responsible for the increase in repetitive behaviours, findings which are supported by other studies (Clark, et al., 1997; Hubrecht, et al., 2002). To contrast the current experiment used group housing in large pens as the alternative housing condition to tethering.

Stud dogs are highly motivated by social facilitation (Copinger & Coppper, 2001), behaviour which is expressed while running with others in a dog team. The current research hypothesized that the prevention of this highly motivated behaviour would impact significantly on behaviour. Therefore, “extended periods without exercise” was included as a variable for analysis, as sled dogs are often not exercised (group running) for anywhere between 4 and 6 months during the summer.

Method

Participants

The participants were nine dogs (3 males, 6 females) selected at random from a population of 300 purebred Siberian husky dogs at a commercial sled dog establishment. All dogs were born at the kennel and reared there from birth. All have been tethered continually from 4 months of age. The participants ranged in age from 3 to 7 years old, with a mean age of 4.5 years (SD = 1.75).

Design

A repeated measures design was used in which all dogs participated in all conditions. The conditions consisted of six months with no-exercise/tethered (Condition A), exercise (daily running) tethered (Condition B), four weeks no-exercise/un-tethered (Condition C) and no exercise/un-tethered (Condition D) (Table 1).

Procedure

After the installation of each camera, participants were filmed remotely (observer not present) in each of the four conditions for a period of 13.5 hours over three days (4.5 hours per day). Of this, 1.5 hours of filming occurred each morning, from 8:30am to 10:00am, and 3 hours each afternoon, from 2pm to 5pm prior to the evening feed. There was no interaction between the participants and the observer during, prior to, or after, filming. Weather conditions were noted, as were uncontrolled variables as they occurred.

Results

Table 1

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>Mean Temp</th>
<th>Tethered/Un-tethered</th>
<th>Housing</th>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8°C</td>
<td>Tethered</td>
<td>Individual</td>
<td>No exercise for 6 months</td>
</tr>
<tr>
<td>B</td>
<td>4°C</td>
<td>Tethered</td>
<td>Individual</td>
<td>Dogs received daily exercise of a minimum of one-hour on dog exist, except during the filming period</td>
</tr>
<tr>
<td>C</td>
<td>11°C</td>
<td>Un-tethered</td>
<td>Individual</td>
<td>No exercise for 4 weeks</td>
</tr>
</tbody>
</table>
| D         | 24°C      | Group pens of 20 metres sq | Group pens of 20 metres sq | No exercise for 3 months, no tethering

Figure 1: Sled dogs in northern Canada.

Figure 2: The tethered conditions

In conditions A, B and C dogs were secured by means of a 2.3 m rope attached to each dog's harness. Cages were tethered in front of their individual enclosures. The surface area was dirt. Each dog had freedom to move within the radius of the tether, as well as up and inside their enclosure. The tether was sufficient to prevent aggression towards neighboring dogs, but this was uncommon.

Figure 3: The un-tethered condition

In the un-tethered condition (D) dogs were moved to group pens measuring 15m x 60m. The pens were only visited once per week to bring the dogs to the Kennel. The pens were separated by high chain-link fencing. The pens contained two open wooden structures with raised floors, which housed drinking and toilet bowls. The size of these structures varied, from 1.2m x 1.2m to 3m x 1.5m. The pens also housed drinking and food bowls. The pens were fenced with 3 metre high chain-link fencing. The pens contained two open wooden structures with raised floors, which housed drinking and toilet bowls.

Conclusion

Long-term tethering of sled dogs produced evidence of significantly higher levels of alert and repetitive behaviours such as fast pacing and significantly fewer social behaviours than the un-tethered housing condition. Placing participants in un-tethered (group housing) significantly reduced redundent and repetitive behaviours. The variable of exercise exor also affected behaviour: “tethering without exercise (Conditions A and C) produced significantly more vigilance and aggroserous behaviour than either tethering with exercise or group housing without exercise. It is likely that social facilitation through sled running exercise produced a calming effect, which enabled the dogs to sleep more in Condition B (Clark, et al., 1997). The effect of exercise (Condition B) was found overall to produce a more significant difference, especially in the amount of time spent sleeping in Condition B, as was expected. By contrast, when exercise was not provided (Conditions A, C and D), the dogs remained alert.

Levels of aggression were highest in the tethered non-exercise conditions of A and C and did not occur in any significant level in conditions B or D. By contrast the most aggression occurred in the condition with the least stimulation: condition C, when there were fewer caregivers in the kennel and no exercise provided. When stimuli were presented, such as a caregiver walking through the grounds, dogs would react with a frustration response which was re-directed onto neighbouring dogs. If the tethers allowed physical contact, aggression took the form of nipping neighbouring dogs' noses and tails. Although actual physical contact rarely occurred, there was evidence that these aggressive responses were not inhibited and that injury would have occurred more frequently had the tethers allowed more contact.

In conclusion, long-term tethering without exercise produces abnormal activity patterns and levels of behaviours in sled dogs, which may be indicative of compromised welfare. Further research on sled dog welfare using biobehavioural indicators of welfare and motivation testing in a controlled experimental setting should be undertaken. Such research might provide evidence that the initial investment in building group housing pen facilities would be offset by the physical and psychological benefits associated with good welfare.

Figure 4: Comparing Conditions

Figure 5. Aggression

Figure 6. Fast Pacing

Figure 7. Sleeping

References


