



Behavioural effects of training on water rescue dogs in the Strange Situation Test



Anna Scandurra^{a,b}, Alessandra Alterisio^a, Biagio D'Aniello^{a,*}

^a Department of Biology, University of Naples "Federico II", via Cinthia, 80126 Naples, Italy

^b Department of Comparative Biomedicine and Food Sciences, University of Padua, Legnaro 35020, Padua, Italy

ARTICLE INFO

Article history:

Received 7 July 2015

Received in revised form 15 October 2015

Accepted 18 October 2015

Available online 25 October 2015

Keywords:

Attachment bond

Dog-human relationship

Strange Situation Test

Training

Water rescue dogs

ABSTRACT

Water rescue training produces dog-human dyads specialized in rescuing people in the water by promoting a strong cooperative relationship between dogs and their handlers. The present study aims to assess whether this training also affects the human-dog attachment bond using an adapted version of the "Strange Situation Test" (SST), consisting of 7 episodes of 3 min each. Thirteen mutually exclusive and two non-mutually exclusive behaviours were considered. Sixty-five dogs (Labrador and Golden retrievers) were tested: 29 dogs had a Water Rescue Certificate[®] (Trained group), 22 dogs had yet to begin the training program (Naïve group), and 14 dogs were untrained (Old group) as an age control that was equivalent to the Trained group.

All dogs showed a pattern of attachment behaviours with their owners, as they played with and greeted the owner more than the stranger and remained oriented towards the door more in the presence of the stranger during the separation episodes. Furthermore, all groups engaged in play with the stranger more when their owner was present rather than absent (episode 2 vs. 3). The Trained group was less explorative than the Naïve and Old groups. Trained dogs engaged in different behaviours not for playing purposes holding a ball in their mouth more than the other groups. Social play behaviours were expressed equally by the Trained and the Naïve groups and less in the Old group. Overall, the water rescue training affected the dogs' behaviour in the SST; however these behavioural differences were (probably) not related to differences in attachment quality.

© 2015 Published by Elsevier B.V.

1. Introduction

Many species of mammals and birds form a variety of social bonds with their conspecifics to maximize their survival and reproduction (Cameron et al., 2009; Connor et al., 2001; de Villiers et al., 2003; Emery et al., 2007; Mitani, 2009; Wasilewski, 2003; Wilkinson, 1985). One type of social bond that typically develops between parents and offspring is attachment. Attachment is a long-term bond through which offspring take advantage by their parents. It is expressed behaviourally through a preference for the attachment figure(s) over other individuals and evokes distress when involuntary separations occur. Attachment is also expressed through behaviours aimed at obtaining and maintaining proximity to the caregiver (Ainsworth, 1989; Ainsworth and Bell, 1970; Bowlby, 1958, 1969; Bretherton, 1992; Rajecki et al., 1978). Although affiliative bonds and attachment usually occur

between individuals of the same species, humans form strong affectional bonds with other animals (e.g. horses, cats, dogs), extending parental-like behaviour towards them (Archer, 1997; Hart, 1995; Prato-Previde et al., 2006; Rowan and Beck, 1994). Using adapted versions of the "Strange Situation Test" (SST), originally devised to investigate the mother-infant attachment bond in humans (Ainsworth and Bell, 1970; Ainsworth et al., 1978), many authors have shown that dogs form an affectional bond with their owners that fulfil all attachment criteria: proximity maintenance and comfort seeking towards the owner, indication of the "secure base" effect in the presence of the owner and distress and protest behaviour upon short-term separation from the owner (Palestrini et al., 2005; Palmer and Custance, 2008; Prato-Previde et al., 2003; Rehn et al., 2013; Topál et al., 1998). Attachment has been reported in adult dogs with varying life experiences (Fallani et al., 2006, 2007; Gácsi et al., 2001; Mariti et al., 2013; Mongillo et al., 2013; Prato-Previde and Valsecchi, 2007; Valsecchi et al., 2010) and has also been documented in 4-month-old puppies (Topál et al., 2005).

Three studies have investigated attachment in guide dogs that, due to their specific training, results in three subsequent bonds with humans: the first with their puppy-walker (during the first

* Corresponding author at: Department of Biology, University of Naples "Federico II", via Cinthia, 80126 Naples, Italy. Tel.: +39 081 679177; fax: +39 081 679233.

E-mail address: biagio.daniello@unina.it (B. D'Aniello).

year of life), the second with their trainer (during the training period) and the third with the visually impaired owner to which they are assigned. These studies showed that the previous separations did not prejudice the formation of a secure affectional bond with the visually impaired owner and that training can modulate behavioural responses in the SST (Fallani et al., 2006, 2007; Valsecchi et al., 2010). In particular, guide dogs showed a lower degree of proximity seeking behaviours than pet dogs did (Fallani et al., 2006), and although guide dogs exhibited more controlled behavioural reactions when they were separated from their impaired visual owners, they had stronger cardiac activation (Fallani et al., 2007). However, apart from some other behavioural differences, the attachment bond in guide dogs seemed very similar to that of pet dogs. In a recent paper, Mariti et al. (2013) reported a trend toward a more secure attachment bond in search and rescue dogs (no significant differences were found), leaving open the possibility that the attachment could be different in working dogs. Thus, to investigate this topic, we studied water rescue dogs, which are particularly appropriate to verify whether the attachment bond is affected in working dogs because the main purpose of training is to promote strong cooperation and synchronization between the dog and handler that can persist in stressful and challenging situations. To strengthen the bond in the human-dog dyad, many of the exercises that the dogs complete are based on a separation in which the handler runs away while the dog is restrained by a trainer and then is released to regain proximity to the handler, which is rewarded by playing behaviour or food. The method of restraining a dog while the owner runs off is commonly used in puppy/beginner training courses also for pet dogs. If this really affects the bond is yet unclear.

Water rescue training involves the formation of dog-human dyads specialized in rescuing drowning people. These dyads cooperate with the coast guard and port authorities when patrolling bathing areas in summer. Water rescue dogs belong to medium-large size breeds (over 30 kg) originally selected to work in aquatic environments, such as Newfoundlands, Labrador retrievers and Golden retrievers. All dogs live with their owners/handlers as pets, but the handler and dog act as a water rescue team when necessary. For dogs to be eligible for training, no specific criteria are required apart from the absence of behavioural pathologies (e.g. aggressiveness) or fear of the water that would make them unsuitable for water rescues. Thus, no other initial screening for dogs' social skills is carried out. The dyad members each have distinctive tasks in a water rescue: the handler is responsible for calming and grasping the drowning person and then supporting and preparing him or her for the journey back; the dog tows both people to safety (to shore or to an emergency boat).

The first stage of training (lasting approximately 12 months) includes advanced obedience training, often involving positive, game-based reinforcement, to consolidate the dog-owner relationship. The second stage (lasting 10 months) involves work in the water that is generally self-rewarding to the dog (intrinsic reinforcement). During this stage, dog and handler carry out common tasks, further strengthening their relationship. Upon completion of training and a successful final examination, dog-human dyads are qualified as water rescue teams (obtaining a Water Rescue Certificate®). It is to be noted that failure to obtain the certificate mainly results from a low athletic performance (based on the standard required by the school) and/or a low motivation of the handler in carrying out a highly demanding and long-lasting training.

Given that the water rescue training is aimed to strengthen the dog-owner cooperative relationship, the goal of the present study is to assess, using the SST, whether this training also affects the human/dog attachment bond.

2. Materials and methods

2.1. Subjects

The subjects were 65 adult dogs (35 males and 30 females; 51 Labrador retrievers and 14 Golden retrievers) recruited from the Italian School of Water Rescue Dogs (Scuola Italiana Cani Salvataggio - SICS) and through personal contacts and advertisements in public places, veterinary surgeons and through the Internet. All dogs lived in a human household with at least two people, and all owners reported that their dogs were accustomed to staying home alone without problems. Twenty-nine dogs (23 Labrador retrievers and 6 Golden retrievers, 13 males and 16 females, mean age \pm SD = 4.3 ± 2.0 years) had the SICS Water Rescue Certificate® (Trained group) and had been working as rescue dogs for at least one year at the time of testing; 22 dogs (17 Labrador retrievers and 5 Golden retrievers, 13 males and 9 females, mean age \pm SD = 1.3 ± 0.4 years) had yet to begin the training program (Naïve group). As the Trained group was older than the Naïve group because of the long period of training that they had undergone, we also introduced 14 untrained dogs (Old group) to act as an age control, equivalent to the Trained group (11 Labrador retrievers and 3 Golden retrievers, 9 males and 5 females, mean age \pm SD = 4.9 ± 2.6 years).

2.2. Experimental design

Dogs were tested in a standardized, unfamiliar environment using a protocol adapted from the SST (Ainsworth and Bell, 1970) used to test the attachment bond in pet and working dogs (Fallani et al., 2006, 2007; Prato-Previde et al., 2003; Valsecchi et al., 2010). The tests were conducted at the University of Naples "Federico II" (Naples) and at the training centre of the Italian School of Water Rescue Dogs (Velletri, Rome) in rooms of 12 and 16 m², respectively, both unfamiliar and novel to the dogs. The rooms contained two chairs (for the stranger and owner), a table, dog toys (two tennis balls and two plastic bottles), a water bowl and two Sony Handy-cam video cameras (HDR-CX115 and HDR-PJ260VE). The rooms had the same geometry, and the door was on the same side in both rooms (Fig. 1). Prior to testing, dog-human pairs were escorted to a different room, where the procedure was described to ensure that the owners were prepared to act in line with the procedure of the experiment. However, the specific goal of the study was not disclosed at this stage. The participants were then moved to the experimental room, and the video cameras were activated. Testing lasted 21 min and consisted of seven 3-min consecutive episodes (Table 1) in which the same unfamiliar male stranger was introduced and the dogs were subjected to two short episodes of separation from their owners. Immediately after each test, the experimental room, water bowl and toys were cleaned with a non-toxic, weakly scented disinfectant.

The stranger and the owner did not induce or stimulate behaviours except for the social play. Saying the dog's name was allowed only when the people were close to the dog to calm it.

2.3. Data collection and analysis

Based on the scientific support from literature (e.g. Mongillo et al., 2013; Palestini et al., 2005; Prato-Previde et al., 2003; Rehn et al., 2013; Valsecchi et al., 2010) the dog behaviour was coded from the video by a trained observer using a 5-second point sampling method by Solomon Coder beta® 14.05.19 (ELTE TTK, Hungary). For each dog, we obtained a sample of 252 points (12 points sample/min \times 3 min \times 7 episodes); for statistical analysis, the absolute number of occurrences of each behaviour was used as the dependent variable. An ethogram composed of 13 mutually exclusive behaviours was compiled. In addition, two non-mutually

Download English Version:

<https://daneshyari.com/en/article/6379374>

Download Persian Version:

<https://daneshyari.com/article/6379374>

[Daneshyari.com](https://daneshyari.com)