

Considering the dog as part of the system: studying the attachment bond of dogs toward all members of the fostering family.



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INTRODUCTION

Attachment bond described by Bowlby (1988) and Ainsworth (1969) in children is characterized by: contact maintenance effect, that leads the subject to maintain physical contact and proximity with the attachment figure; protest and anxiety when parted from the attachment figure; and secure base effect, where the attachment figure represents a base around which the child explores the world (Ainsworth, 1969; Ainsworth & Bell, 1970; Bowlby, 1988).

In the last years many researches investigated the relationship between dogs and their owners as an attachment bond (Topàl et al., 1998; Prato-Previde et al., 2003; Palestini et al., 2005; Palmer & Custance, 2008). Until now dogs attachment to humans has been studied investigating the bond to only one person, namely the owner.

AIM

Since many dogs live in multi-member families and they relate to all members of the fostering family, the aim of this study was to evaluate whether those dogs develop different levels of attachment toward different family members, showing a higher attachment to a specific person; and, if it is the case, which characteristics of the owner or their relationship may lead to such preference.

SUBJECTS, MATERIALS AND METHODS

Eleven families participated in the study with their dogs; all characteristics are summarized in table 1. All the dogs had been living with those families for more than 6 months, they were used to being taken out and well socialized to people. The absence of behavioural problems which may influence this research was investigated by the staff of the Behavioural Counselling Centre for Pets at the University of Pisa (Italy). Before starting the experiments, all the participants filled in a questionnaire, including the Lexington Attachment to Pet Scale (Johnson et al., 1992; Marinelli et al., 2007), regarding their relationship with the examined dog.

The bond was analyzed by using a modified version of the Ainsworth Strange Situation Test, and all the family members and a stranger participated contemporaneously in the test. The stranger was played by a 25 year old woman, the same for all dogs.

All tests were videorecorded and observed through a continuous recording, registering the duration of 23 behaviours divided in social and non-social behaviours. Some behaviours have been grouped in order to create the following behavioural categories:

- ✓ contact with/proximity to door/chair/shoe during the absence of each person;
- ✓ contact with/proximity to each person re-entered in the room after his/her absence;
- ✓ contact with/proximity to each person re-entered in the room after the absence of all participants;
- ✓ whinings during the absence of each person;
- ✓ social play;
- ✓ greeting score (calculated as suggested by Topàl et al., 1998).

Although behaviours grouped in categories have the same meaning, they express a different degree respectively of maintenance contact effect and protest at separation, so different weights have been assigned to each of them disguised as fraction lower to unit.

Data were analyzed considering individual dogs, comparing their behaviour towards the different characters involved in the test. Analyses were done by using the χ^2 test ($p < 0.05$). The level of attachment to each person was measured by the number of χ^2 which resulted statistically significant compared to other participants.

RESULTS

The analysis of data reveal that:

- ✓ on 11 examined dogs, 8 dogs (72.7%) showed a higher attachment towards a specific person;
- ✓ no difference was found based on the sex (4 men and 4 women) and age (10 to 65 years) of the preferred person.
- ✓ walking a dog (100.0% of preferred figures) is an activity predisposing to create a stronger attachment bond.

Data also suggest that owners on the whole were able to recognize a higher dog attachment bond towards a specific person, their answers corresponding to the result of the test in 75.0% of cases.

No correlation was found between the reciprocal dog-human levels of attachment.

DISCUSSION AND CONCLUSIONS

Results suggest that a dog living in a multi-member family develops different levels of attachment towards different members of the family, and often shows a higher attachment towards a specific person. Differently from what observed by Topàl and colleagues (1998), dogs living in a numerous family (three or four-people families), do not show a lower attachment, but in these dogs it was possible to observe a kind of hierarchy in the level of attachment toward different owners, as reported by Bowlby (1988) in children.

Being walked by a person appeared an important factor for creating a strong attachment bond, more important than food, play and education, maybe for the benefits dogs gain from it: exercise, social interaction with people and dogs and environmental stimulation. As already suggested by other Authors, the dog-owner relationship seems to be more affected by the quality rather than the amount of time spent together (O'Farrell, 1992; Rooney & Bradshaw, 2003); and the act of feeding is a minor part of the relationship, that does not produce a strong emotional response out of feeding time (Scott and Fuller, 1965).

Further research is needed in order to assess the possible influence on dog attachment to people of dog sex, age and breed, besides the duration of cohabitation with the family.



Fig. 1: Greeting behaviour with physical contact at one owner's reentering. The red line indicates the 1 meter semicircle drawn around the door, within which people have to stop when re-entering.

Fig. 2: Setting of the behavioural tests, with all the family members and the stranger present. The dog is playing with one of the three available toys.



Dog	Breed	Sex	Age (months)	Number of family members	Family members	Dog management				L.A.P.S	Attachment figure	Total score	Stranger's score
						Food	Walkin g	Play	Training				
Luna	Border Collie	♀	22	2	LU1	x	x	x	x	H	Yes	3	0
					LU2	-	x	-	-	M	-	2	
Nebbia	Mixed-breed	♀	84	2	NE1	x	-	-	-	H	-	2	0
					NE2	x	x	x	x	H	-	2	
Brando	Australian Shepherd	♂	24	2	B1	x	x	x	x	H	Yes	2	0
					B2	-	x	x	x	H	-	1	
Nuvola	Labrador Retriever	♀	72	2	NU1	x	x	-	-	H	-	1	0
					NU2	-	-	x	x	H	-	1	
Carlotta	Mixed-breed	♀	42	2	CL1	-	-	-	-	M	-	1	0
					CL2	x	x	x	x	H	Yes	3	
Lilly	Beagle	♀	36	3	LI1	-	x	x	-	H	-	1	0
					LI2	-	-	x	x	H	-	1	
					LI3	x	x	-	-	H	Yes	4	
Oliver	Dalmatian	♂	108	3	O1	-	x	x	-	M	Yes	5	0
					O2	x	-	-	-	M	-	1	
					O3	x	-	-	-	H	-	1	
Poppy	Pog	♀	36	4	P1	-	-	-	-	M	-	2	0
					P2	x	x	x	x	H	Yes	4	
					P3	-	-	-	-	H	-	3	
					P4	x	-	-	-	H	-	2	
Isotta	Labrador Retriever	♀	13	4	I1	x	x	x	x	M	-	4	4
					I2	x	x	x	x	H	-	3	
					I3	x	x	x	x	M	-	2	
					I4	x	x	x	x	M	-	3	
Kristy	Miniature Poodle	♀	84	4	K1	-	-	-	-	L	-	4	3
					K2	-	-	-	-	L	-	2	
					K3	-	-	-	-	M	-	0	
					K4	x	x	x	x	M	Yes	6	
Camilla	Labrador Retriever	♀	48	4	CM1	-	-	-	-	M	-	4	1
					CM2	-	-	-	-	H	-	1	
					CM3	-	-	-	-	H	-	0	
					CM4	x	x	x	x	H	Yes	5	

Tab. 1: summary of results obtained by behavioural tests and questionnaires. The L.A.P.S. score, a measure of owner attachment towards the dog, was divided into low (L), medium (M) or high (H) (according to Johnson et al., 1996; Marinelli et al., 2007).

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