

Dog owner interaction in dogs with and without separation anxiety related behavior (SRB) after a separation period

B. A. Siereveld

Department of Animals in Science and Society, Faculty of Veterinary Medicine, Utrecht University, 2013

Abstract

In this study 22 dogs with separation anxiety related behavior (SRB) and 7 dogs without SRB were participating with their owners in a clinical trial to observe the owner-dog interaction. The behavior of the owner is thought to be an underlying cause of separation anxiety in dogs. The behaviors of the owner and dogs were recorded during three phases: the table phase, separation phase and reunion phase. Owners filled in a questionnaire about the prevalence of SRB symptoms and a questionnaire about the 'quality of life' of their dog. This study's focus is on the behavior of the owner during the reunion phase. Results show that SRB owners touched their dog more, showed more control talk, looked more to their dog and sit more facing their dog than non-SRB owners did. Female owners petted their dog more and showed more control talk and general talk to their dog in comparison with male owners. A significant positive correlation was found between control talk and non-verbal control of the owner, between control talk and total talking to the dog, between comfort talk and total talking to the dog and comfort talk and the sum of all physical interactions.

Introduction

Separation anxiety in dogs is severe distress seen when dogs are separated from their owner (Schwartz, 2003). In a research in the United States, 14-17% of the included dogs showed signs of separated related behavior (Sherman & Mills, 2008) and in a research of the United Kingdom at least 20% of the dogs showed signs of separation anxiety (Guthrie, 1999). Separation anxiety related behavior (SRB) includes destructiveness, moving objects in the house, excessive salivation, urination and defecation, stress vocalization, auto mutilation and restlessness (Sherman & Mills, 2008; Guthrie, 1999; Flannigan & Dodman, 2001; Schwartz, 2003).

SRB dogs are most often dogs with a high emotional value to their owner. In a research 95% of the SRB owners thought their dogs were perfect, neglecting the destructive behavior of the dog (Lindell, 1997).

Predisposing factors associated with separation anxiety related behavior are dogs that are left alone for long times or dogs that are almost never left alone, moving of the owner or the loss of another companion animal in the household (Voith & Borchelt, 1996; Flannigan & Dodman, 2001; Schwartz, 2003).

Hyperattachment to the owner is believed to be an indicator of SRB (McCrave, 1991; Appleby & Hetah, 1997). Hyperattachment is defined as dependency of the dog on one or more persons in the dog's environment. Typical manifestations of hyperattachment are following the owner from room to room, the dog constantly wanting to be held, displaying distress if separated from the owner or effusive greeting behavior at the time of the owner's return (Appleby & Pluijmakers, 2003). Hyperattachment is been questioned to be an indicator of SRB because many SRB dogs lack elements of extreme attachment (Overall, 1997) and non-SRB dogs can show hyperattachment as well (Parthasarathy, 2006). Also spoiling activities of the owner (feeding the dog from the table or allowing the dog to sleep on the owner's bed) are not more common in dogs with hyperattachment, suggesting no association between SRB and spoiling activities of the owner (Voith, 1992; Flannigan and Dolman, 2001).

In this study the interaction between dogs and their owners were investigated in a group of dogs with and without SRB as reported by their owners. We wanted to see if there are differences in behavior of owner of dogs with SRB and owners with dogs without SRB. We expected that owners of SRB dogs tend to ignore (not looking to the dog, no physical contact and no verbal and non-verbal interaction with the dog) their dog more and show more controls to the dog. For example, dogs that repeatedly greeted their owners with unwelcome surprises after reunion, like destructiveness or defecation, may provoke owners to reduce excitement by ignoring the dog or giving controls. Besides, maybe owners think this is a good therapy for dogs showing separated related behavior.

We compared our results with a previous study from Soppe (2013) that found that:

- Male owners look longer to their dog
- SRB owners look more to the camera and more around the room
- Non-SRB owners pet their dog more
- Male owners pet their dog more
- Correlation between verbal control and non-verbal control
- Correlation between owners verbal control in the reunion phase and all vocals of the dog during the separation phase
- Correlation between total look around of the owner in the reunion phase and all vocals of the dog during the separation phase

Material and methods

Design

This research included 22 SRB dogs and seven non-SRB dogs. The non-SRB dogs were all female dogs and the SRB dogs included eleven female and eleven male dogs.

SRB dogs (n=22)	♀	11
	♂	11
Non SRB dogs (n=7)	♀	7
	♂	0

Table 1: overview of the selected dogs in this study.

The dogs were of different breeds and age, varying from one year to 14 years of age. The owners included five male and 24 female owners of different age ranging from 20 to 50 years of age. An advertisement was placed for recruiting owners where they could apply by phone or email. Owners were selected by a screening list (appendix I). Selection criteria for the dog included a minimal age of eleven months, minimal three months in possession of this owner and no (severe) sicknesses or medications that could influence the study. A checklist was used as a guideline for separation related behavior in dogs, including howling, barking defecation, urination, not eating and drinking in absence of the owner and overexcitement greeting behavior, following and attention seeking behavior in presence of the owner. The selected owners were called for an appointment to start the study.

Material

- Polar RS800CX training computer with a polar Wearlink® W.I.N.D. transmitter
- Sony digital HD video camera and one fitted overview video camera

- DVD's 'Staples'
- DVD player and monitor
- Enquête (appendix I)

Procedure

Dogs and owners were invited to the Utrecht University Animal Behavior Clinic.

Appointments with the owners always took place in the afternoon, around two pm or three pm in the poly rooms. Poly room 13 was used for introduction and acclimatization and poly room 15 was used for the test. In poly 13 the dog was able to explore the room and the owner informed about the test and asked for permission. After this, the owner was left alone with the dog for five minutes in the acclimatisation period. During this time the owner was asked to fill in a questionnaire (appendix II) about the behaviour of the dog when left alone. After the acclimatisation period the owner and dog entered poly 15. Only one owner went to poly 15, co-owners if present, were staying in poly 13. The dog was put on the veterinary examination table.

The observation was divided in three phases: the table phase, the separation phase and the reunion phase. In the table phase the dog was standing on the examination table with the owner nearby. After the table phase, the separation phase started. In the separation phase the dog was taken of the examination table and the owner leaves the room for five minutes. The behavior of the dog was recorded by three camera's; the big-, small- and overhead camera. The big camera recorded the entrance door, the small camera recorded the two chairs where the owner can sit down and the overhead camera recorded an overview of the entire room. After five minutes the owner entered the room and the reunion phase started. The owner was asked to treat the dog like he/she would do at home. The three cameras also record the behavior of the owner.

A maximum of two owner-dog dyads were observed in the same day. After each standard observation the rooms were ventilated, so any possible disturbances like pheromones and odors were minimized. The temperature of the poly room was measured before the table phase took place and at the end of the test after the second saliva sample was taken.

Non-SRB dogs were tested before the SRB dogs to control for influences.

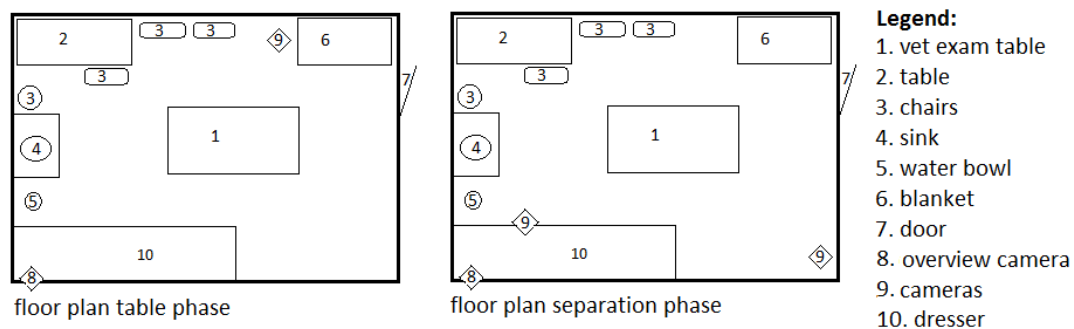


Figure 1: Overview of the room during the table phase and separation phase.

Data analysis

The videos were scored for different categories according to the ethogram of the study of Soppe, 2013 (appendix III).

All the collected data were statically analyzed in the software program SPSS version 20. Non-parametric tests like the Mann-Whitney U for comparison between SRB and non-SRB dogs and the Spearman's Rho for correlations were used.

Results

Reunion phase

Owner behavior directed to the dog

Figure 2 shows the owner behavior (frequencies) directed to the dog's body displayed by owners of SRB- and non-SRB dogs during the reunion phase.

Touching the dog was marginal significant more displayed by SRB owners ($U=41,500$, $n=29$, $p=0.065$). Female owners petted their dog significantly more ($U=22,500$, $n=29$, $p=0.030$) than male owners. Also the sum of all physical interactions (hugging, kissing, moving, petting and touching the dog by the owner) was performed significantly more in female owners than in male owners ($U=23,000$, $n=29$, $p=0.033$).

Female owners showed significantly more non-verbal encouragement towards their dog than male owners ($U=27,500$, $n=29$, $p=0.037$).

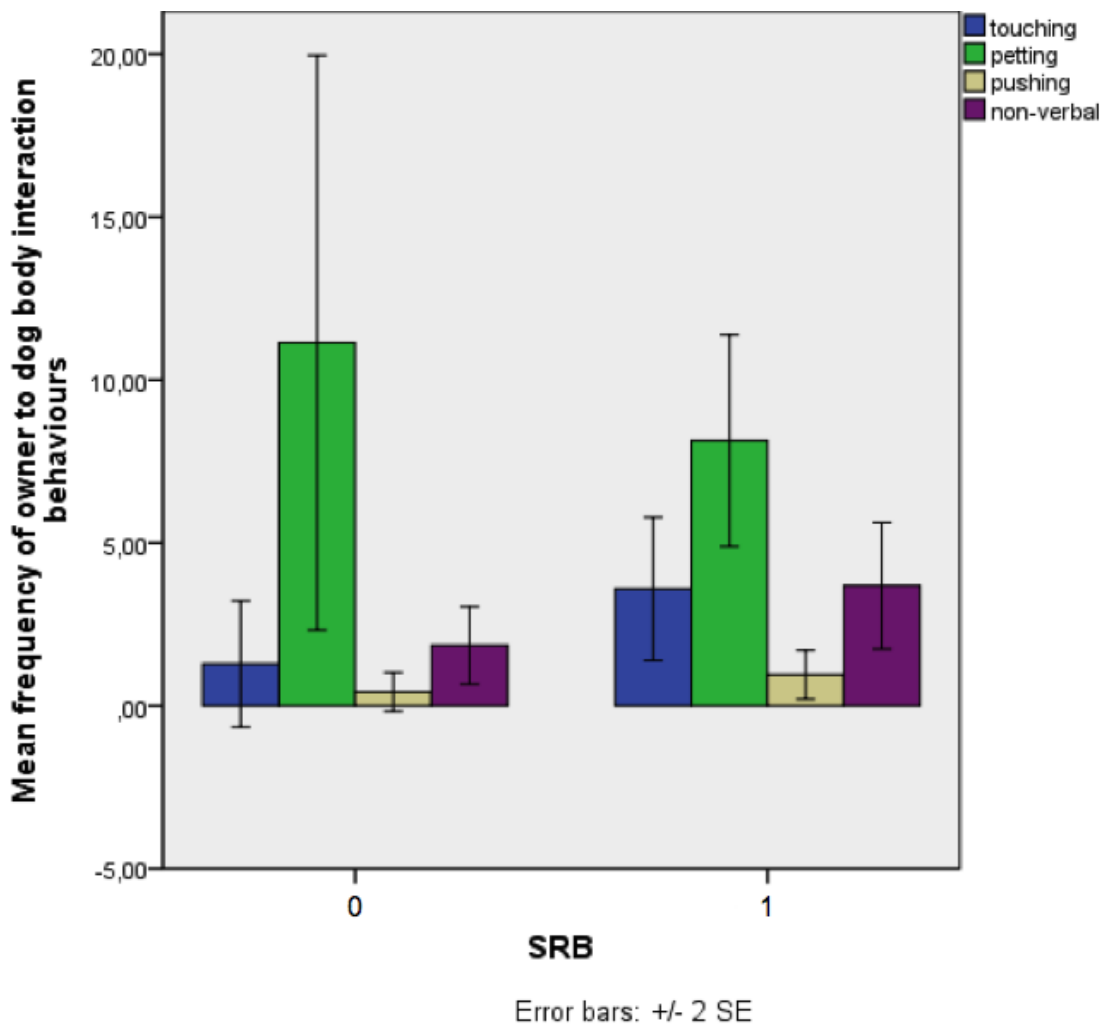


Figure 2: Owner's behaviors directed to the dog's body in owners of SRB and non-SRB dogs displayed during the reunion phase (0 = non-SRB dogs, 1= SRB dogs).

Figure 3 shows the frequency of owners vocal interactions (without intonation) directed at SRB dogs and non-SRB dogs during the reunion phase.

No significant differences were found between SRB and non-SRB owners, but some gender differences were found. Female owners performed more control talk towards their dog than male owners ($U=20,500$, $n=29$, $p=0.022$). Also female owners tended to talk in generally

(comfort talk, control talk and general talk) more towards their dog (U=24,000, n=29, p=0.038).

Taking intonation into consideration (figure 4) SRB owners showed significantly more control talk toward their dog (U=36,500, n=29, p=0.032) than non-SRB owners. Female owners tended to talk in general more (talking without controlling or comforting the dog) to their dog than male owners (U=21,000, n=29, p=0.024).

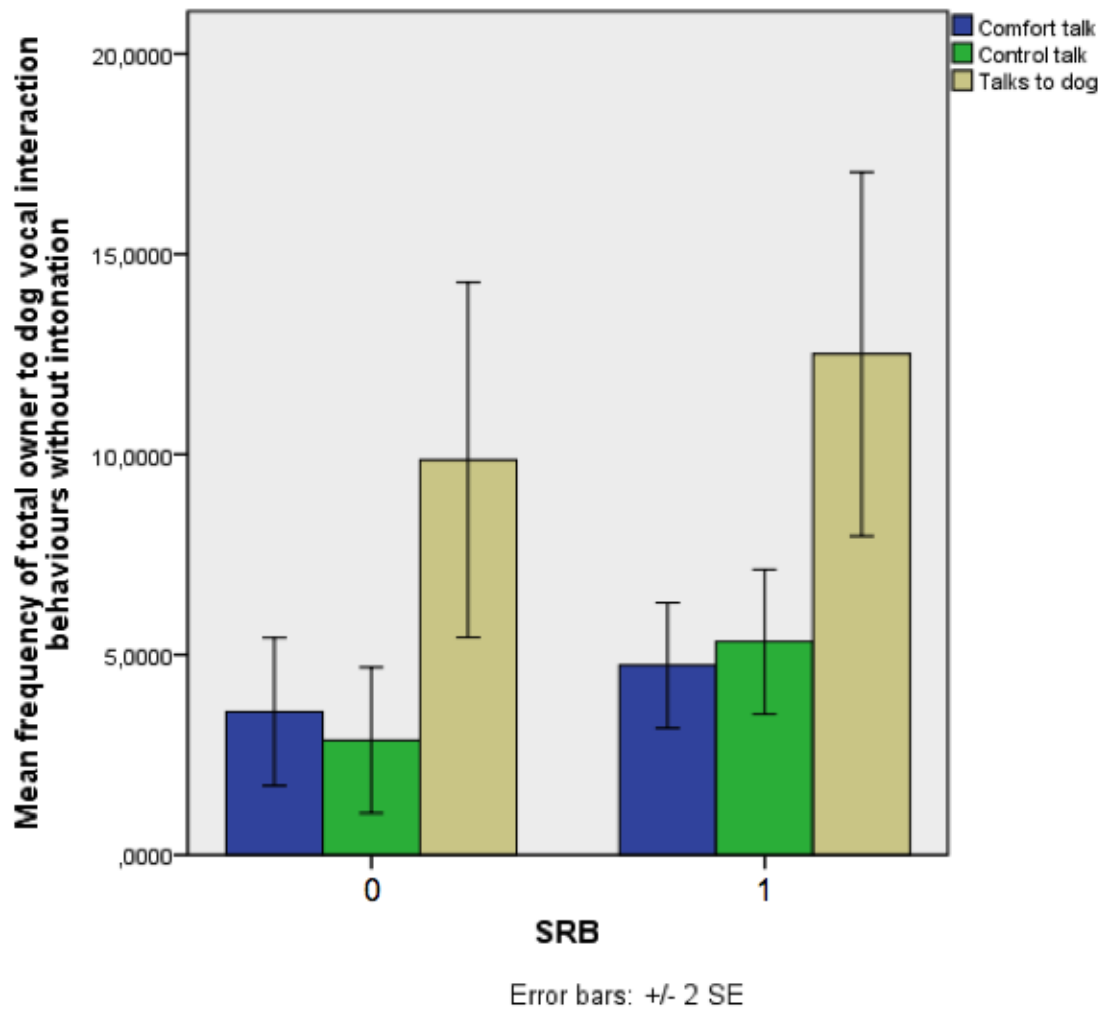


Figure 3: vocal interactions of the owner (without intonation) during the reunion phase in owners of SRB and non-SRB dogs (0 = non-SRB dogs, 1= SRB dogs).

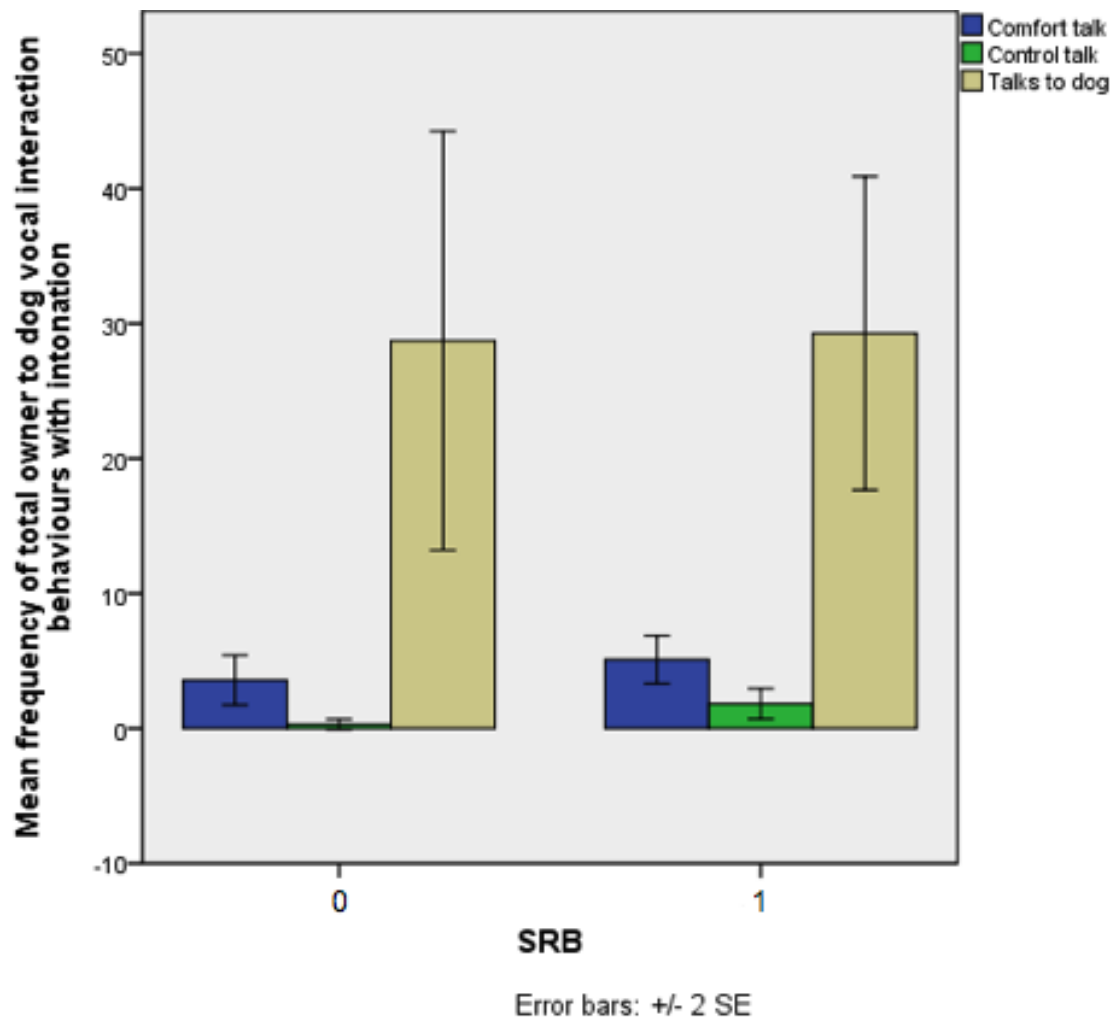
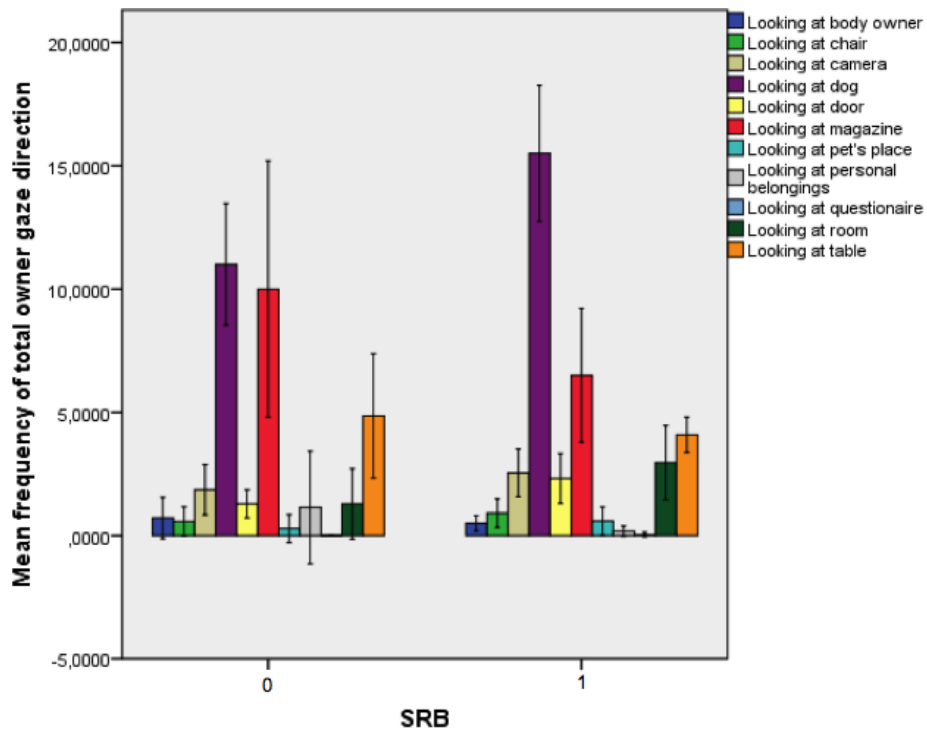


Figure 4: vocal interactions of the owner (with intonation) during the reunion phase in owners of SRB and non-SRB dogs (0 = non-SRB dogs, 1= SRB dogs).

Figure 5 shows the frequency of owners gaze direction in owners of SRB and non-SRB during the reunion phase. SRB owners looked more to their dog than non-SRB owners ($U=39,000$, $n=29$, $p=0.027$; one tailed). Non SRB-owners looked more to the magazine ($U=39,000$, $n=29$, $p=0.026$; one tailed). The 'total look around' was higher in non-SRB- than in SRB owners ($U=36,000$, $n=29$, $p=0.037$). No significant differences were found between female and male owners.

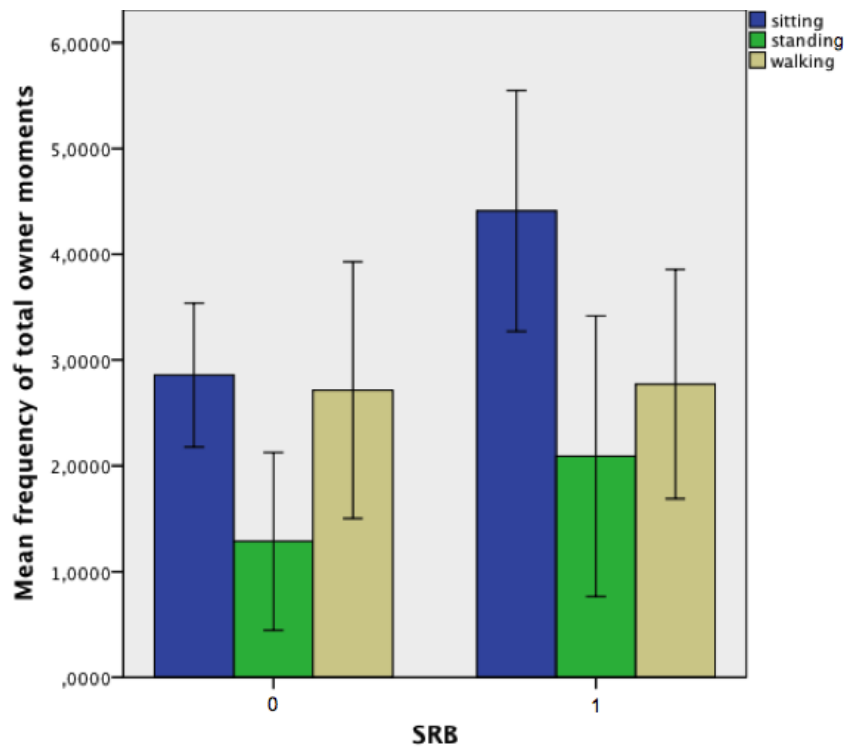
Figure 6 shows the frequency of total movement in owners of SRB and non-SRB owners during the reunion phase. No significant differences were found in total movement (sitting, standing and walking of the owner) but SRB owners tended to sit more towards the dog than non-SRB owners ($U=37,500$, $n=29$, $p=0.044$).

No significant differences were found between the gender and movement of the owner.



Error bars: +/- 2 SE

Figure 5: gaze direction of the owner during the reunion phase in owners of SRB and non-SRB dogs (0 = non-SRB dogs, 1= SRB dogs).



Error bars: +/- 2 SE

Figure 6: total movements of the owner during the reunion phase in owners of SRB and non-SRB dog (0 = non-SRB dogs, 1= SRB dogs).

A correlation was found between control talk and non-verbal control, but only without intonation ($r=0.446$, $n=29$, $p=0.015$).

There was also a correlation found between owner talk to the dog in frequency and control talk of the owner, this correlation was stronger without intonation ($r=0.586$, $n=29$, $p=0.001$) than with intonation ($r=0.349$, $n=29$, $p=0.063$). A correlation between comfort talk of the owner and owner talk to the dog was found ($r=0.580$, $n=29$, $p=0.001$). Comfort talk of the owner and all physical interactions are also correlated ($r=0.524$, $n=29$, $p=0.004$).

Questionnaire results (appendix III)

Significant correlations were found between some of the answers given by owners in the short questionnaire about their dog's behavior at home and SRB status (SRB or non-SRB dogs). Significant outcomes were found for owner following of the dog in the house and SRB ($p=0.000$), dogs vocals in absence of the owner and SRB ($p=0.000$), complains of neighbors when the dogs are left alone and SRB ($p=0.017$), destructiveness of the dog when left alone and SRB ($p=0.038$), hyperactivity of the dog when left alone and SRB ($p=0.000$), defecation and urination of the dog when left alone and SRB ($p=0.017$) and exhausting behavior of the dog when the owner returns (after greeting) and SRB ($p=0.000$).

Comparison with previous study (Soppe, 2013)

All dogs (dogs in previous study and this study)

When dogs from both studies are combined non-SRB owners petted their dog more than SRB owners ($U=347,000$, $n=76$, $p=0.019$).

Also SRB owners used significantly more control talk (with intonation) to the dog than non-SRB owners during the reunion phase ($U=386,500$, $n=76$, $p=0.058$).

Comparison reunion phase with table phase

Significant correlations were found between behavior of the dog in the table phase and behavior of the owner in the reunion phase. A significant correlation was found between the duration of all physical interactions of the owner in the reunion phase and the duration of the head of the dog directed to the environment in the table phase ($r=0.412$, $n=29$, $p=0.026$; figure 7).

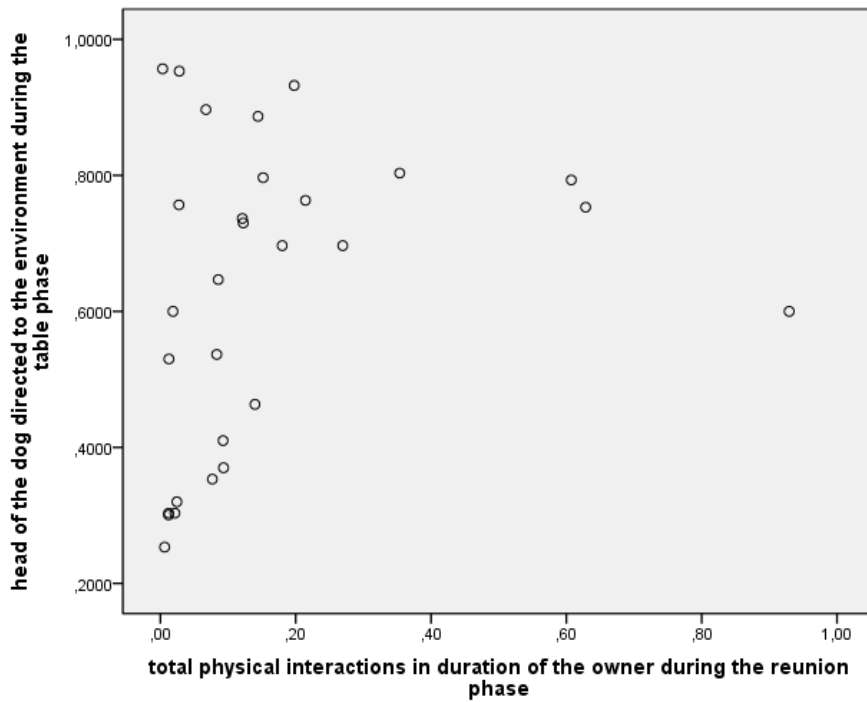


Figure 7: Scatter plot of head direction of the dog to the environment during the table phase and the sum of all physical interactions of the owner during the reunion phase.

Owners who talk a lot to the dog in the table phase (not comfort or control talk) tended to pet their dog more in the reunion phase ($r=0.382$, $n=29$, $p=0.041$; figure 8).

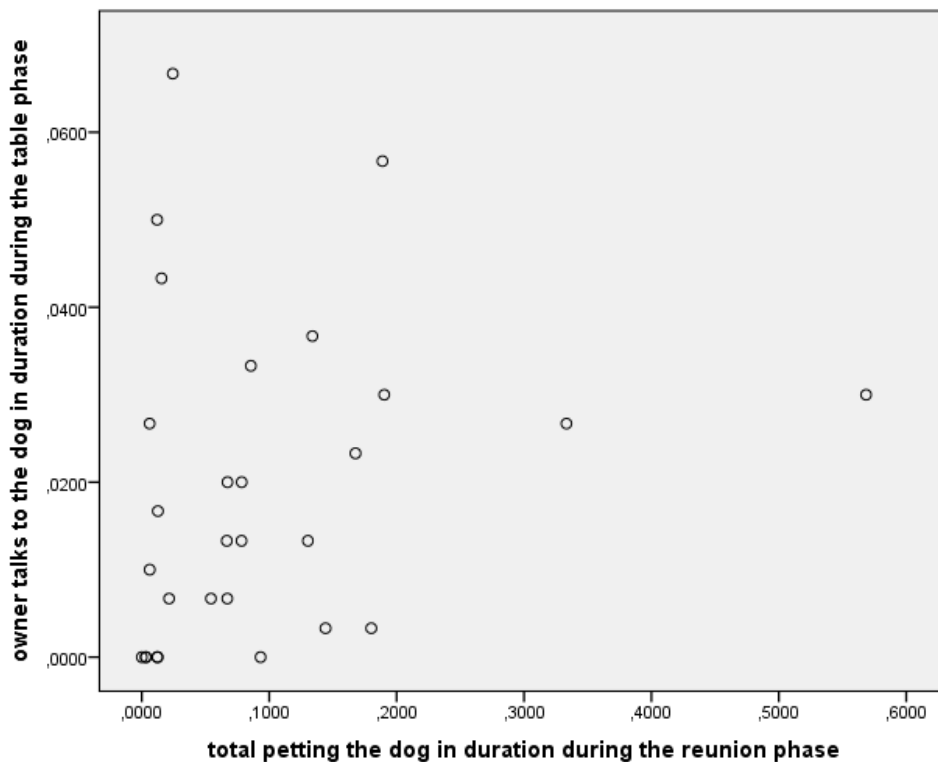


Figure 8: Scatter plot of general talk of the owner during the table phase and total petting of the dog during the reunion phase.

Owners that showed a lot of comfort talk to their dog in the table also showed a lot of comfort talk to their dog in the reunion phase ($r=0.424$, $n=29$, $p=0.022$; figure 9).

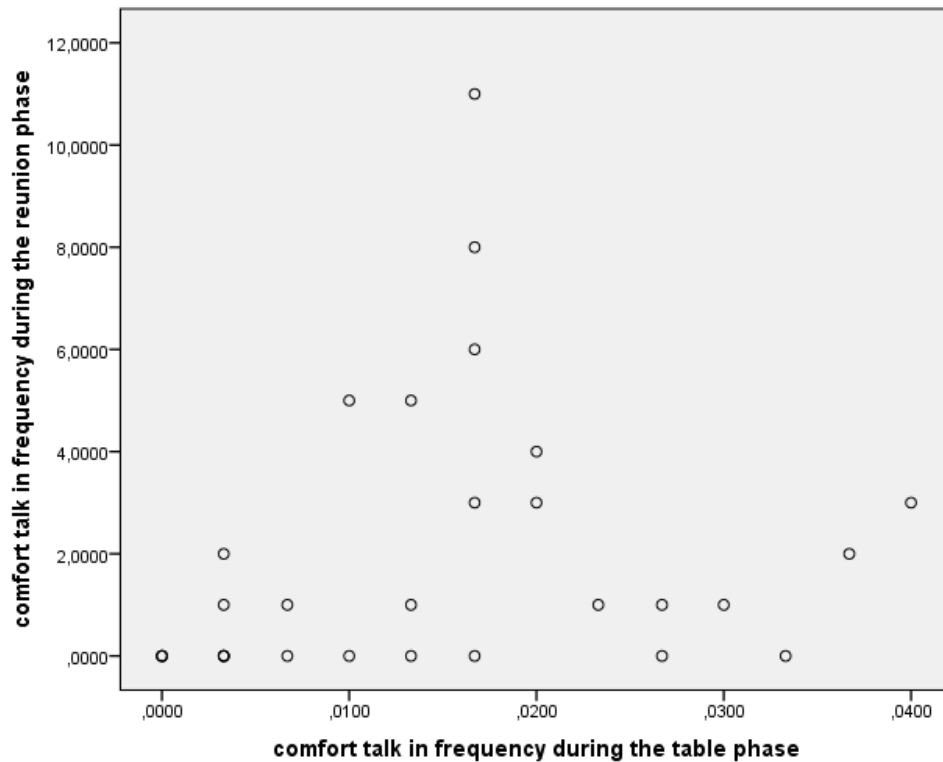


Figure 9: Scatter plot of comfort talk of the owner during the reunion phase and comfort talk of the owner during the table phase.

All physical interactions of the owner in the table phase are significantly positively correlated with all physical interactions of the owner in the reunion phase ($r=0.471$, $n=29$, $p=0.010$; figure 10) and all physical interactions of the owner in the table phase are significantly positively correlated with non verbal controls of the owner in the reunion phase ($r=0.435$, $n=29$, $p=0.018$; figure 11).

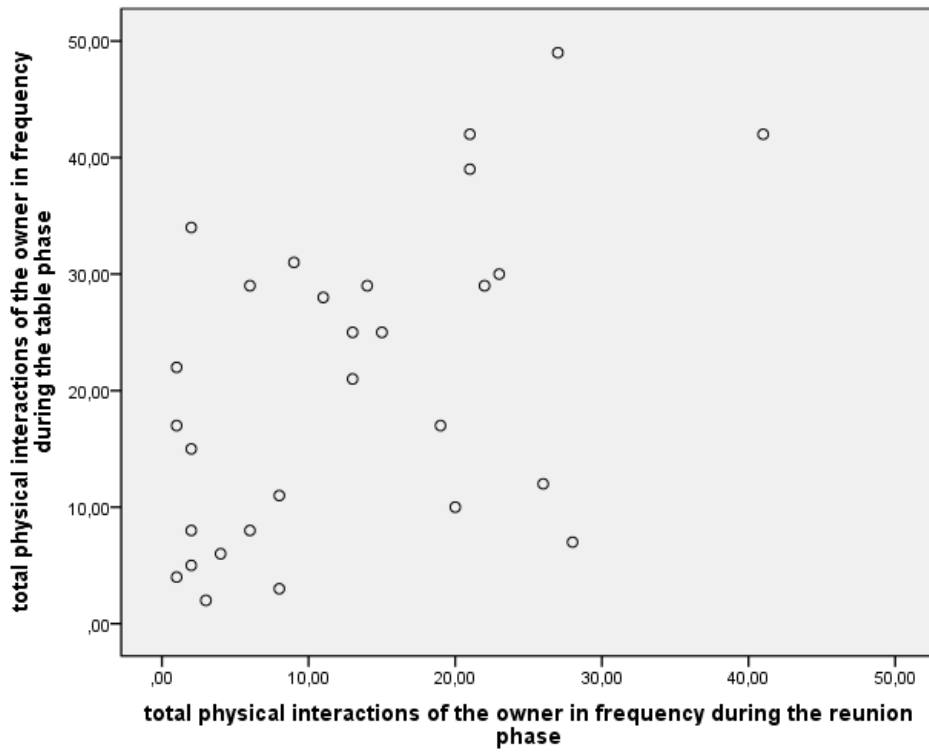


Figure 10: Scatter plot of the sum of all physical interactions of the owner during the table phase and the sum of all physical interactions of the owner during the reunion phase.

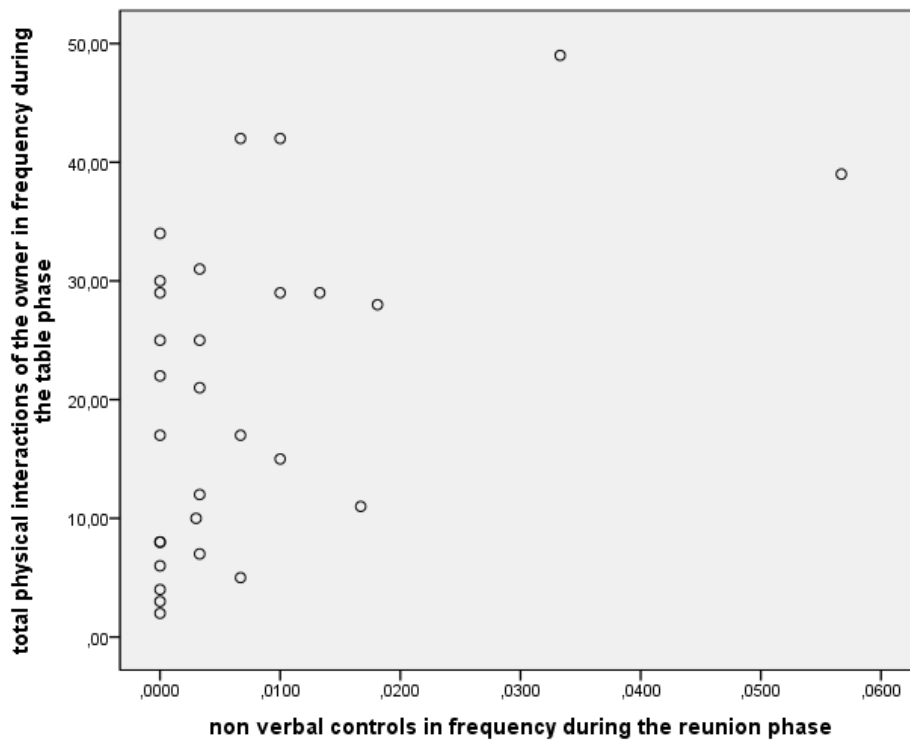


Figure 11: Scatter plot of the sum of all physical interactions of the owner during the table phase and non-verbal controls during the reunion phase.

Comparison reunion phase with separation phase

All door movements from the dog in the separation phase in duration are significantly positively correlated with the greeting time of the owner ($r=0.493$, $n=29$, $p=0.007$; figure 12).

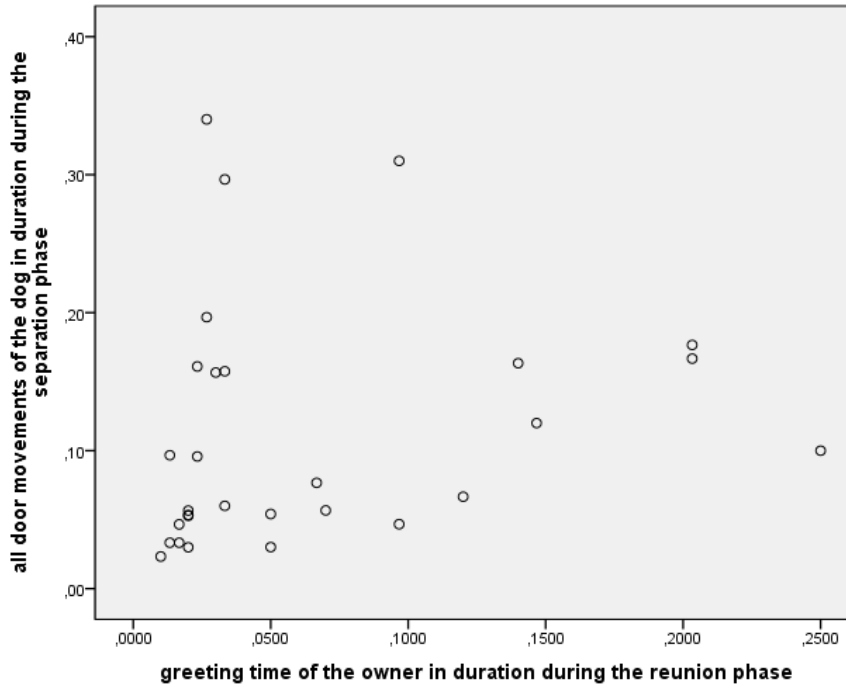


Figure 12: Scatter plot of all door movements of the dog during the separation phase and greeting time of the owner during the reunion phase.

All door movements of the dog during the separation phase are significantly positively correlated to looking at the dog by the owner during the reunion phase ($r=0.448$, $n=29$, $p=0.015$; figure 13), but significantly negatively correlated to looking at the magazine of the owner during the reunion phase ($r=-0.507$, $n=29$, $p=0.005$; figure 14) and significantly negatively correlated to total look around of the owner in duration during the reunion phase ($r=-0.453$, $n=29$, $p=0.014$; figure 15).

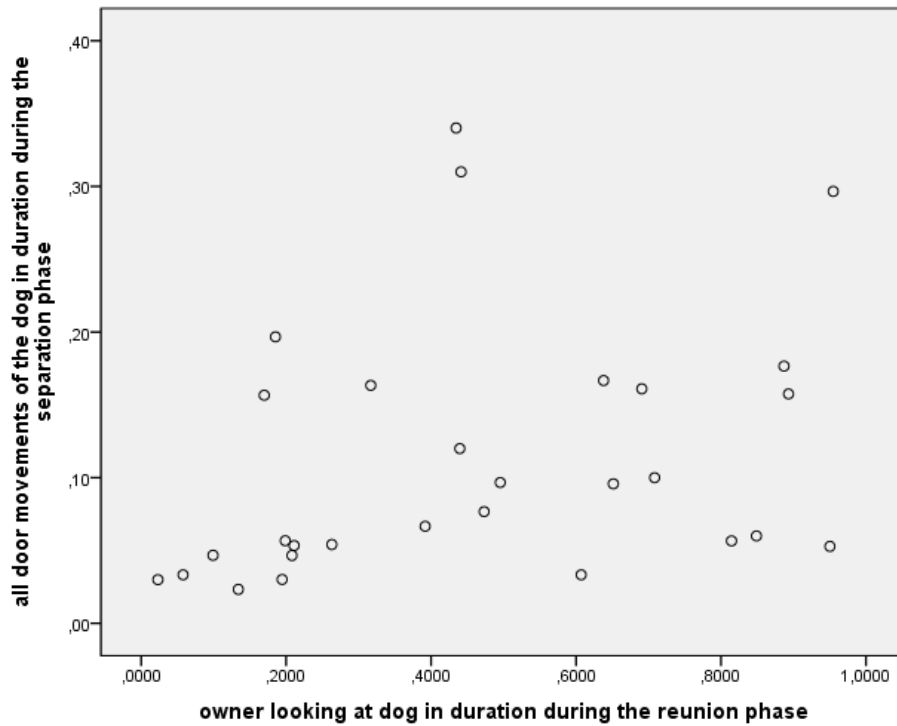


Figure 13: Scatter plot of all door movements of the dog during the separation phase and owner's looking at dog during the reunion phase.

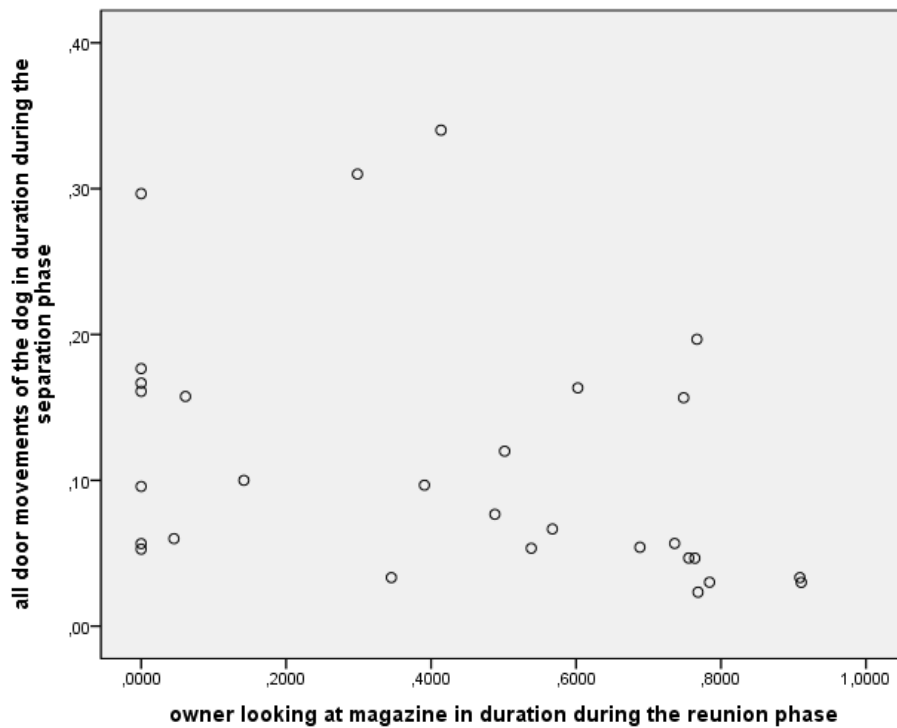


Figure 14: Scatter plot of all door movements of the dog during the separation phase and owner's looking at magazine during the reunion phase.

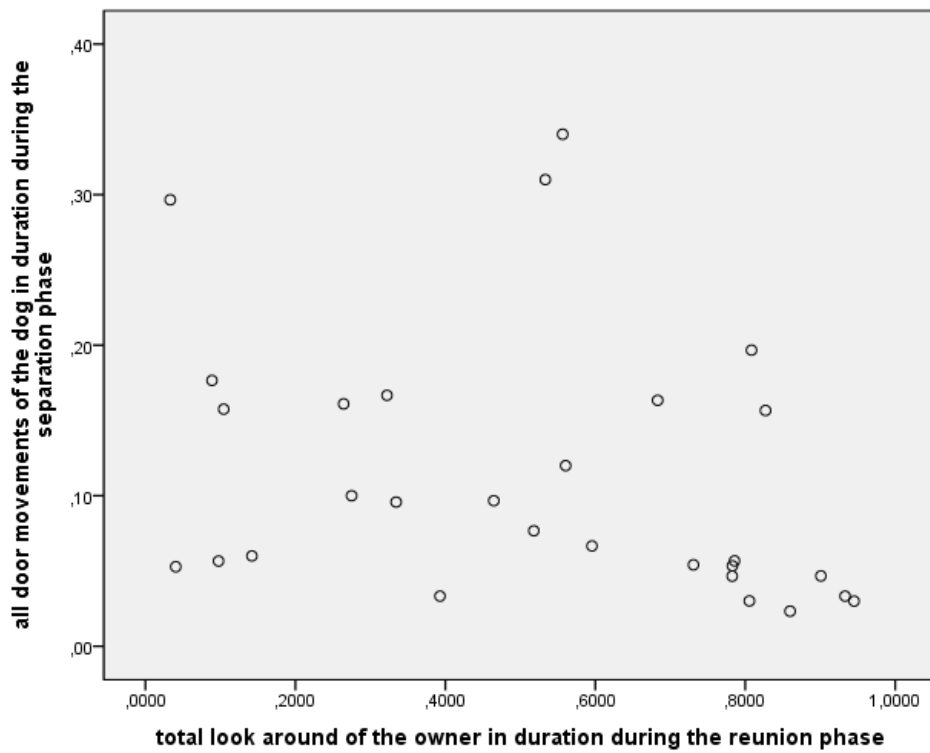


Figure 15: Scatter plot of all door movements of the dog during the separation phase and total look around of the owner during the reunion phase.

Total door movements of the dog are significantly positively correlated to comfort talk ($r=0.471$, $n=29$, $p=0.010$), general talk to the dog ($r=0.443$, $n=29$, $p=0.016$), total talk to the dog ($r=0.490$, $n=29$, $p=0.007$) and control talk but only without intonation ($r=0.567$, $n=29$, $p=0.001$; figure 16).

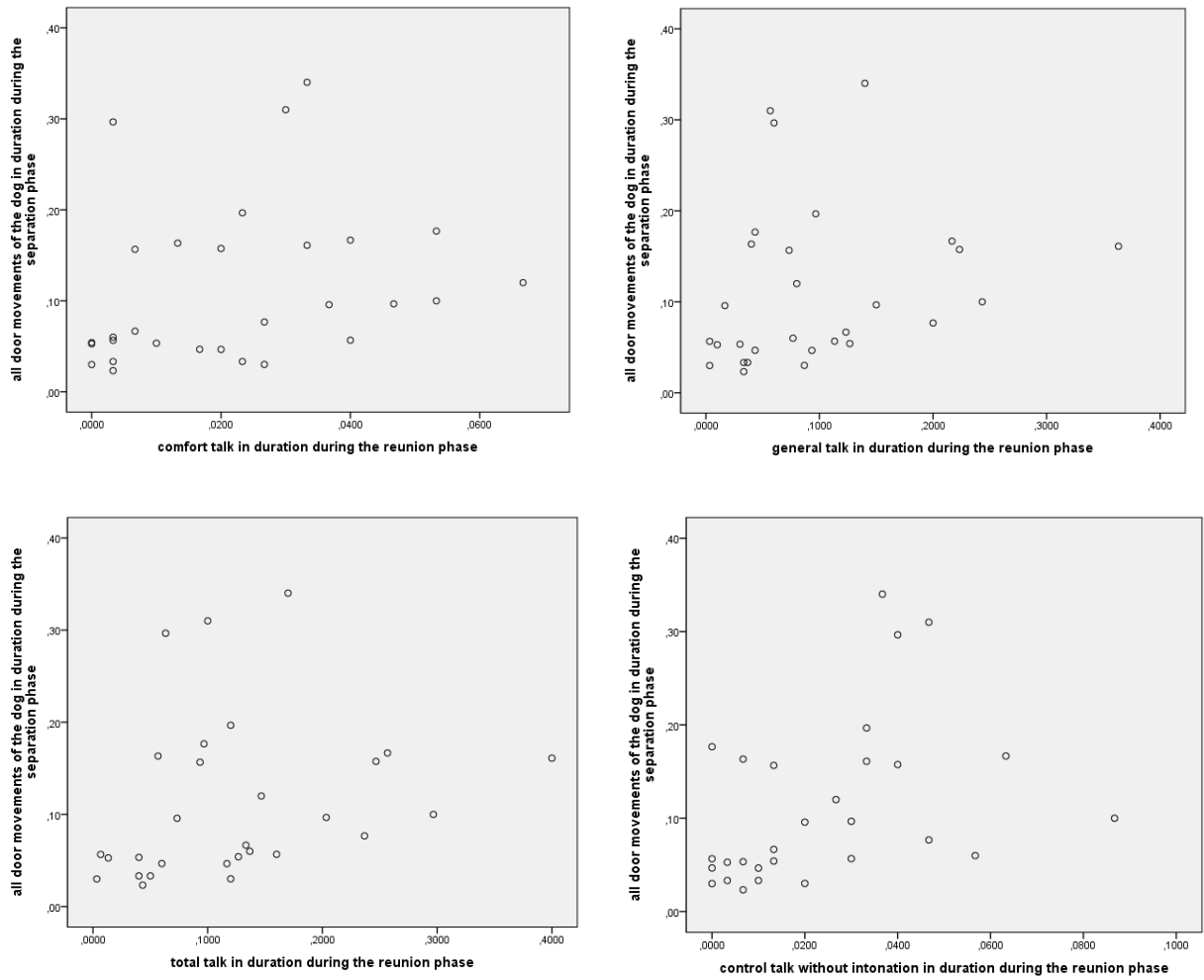


Figure 16: Scatter plot of all door movements of the dog during the separation phase and comfort talk, general talk, control talk and the sum of talking of the owner during the reunion phase.

Total door movements of the dog are significantly positively correlated to the total non-verbal of the owner in the reunion phase ($r=0.526$, $n=29$, $p=0.003$) and significantly positively correlated to non-verbal invites ($r=0.378$, $n=29$, $p=0.043$) and non-verbal controls ($r=0.457$, $n=29$, $p=0.013$; figure 17).

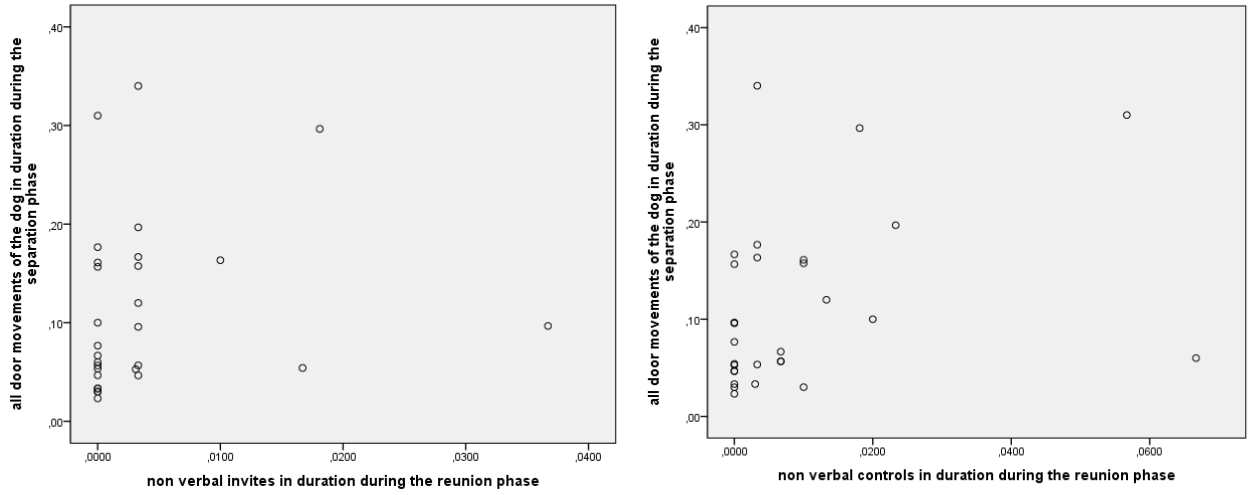


Figure 17: Scatter plot of all door movements of the dog during the separation phase and non-verbal invites and non-verbal controls.

Discussion

We predicted that SRB owners would ignore their dog more than non-SRB owners. We defined ignoring as not looking at the dog, making no physical contact with the dog and no verbal and non-verbal interaction with the dog during the first minute after dog-owner reunion. This study found that SRB owners touched their dog more and spend more time looking at their dog. This suggests that SRB owners were paying more attention to their dog than non-SRB owners. A study of McGreevy & Masters (2007) showed that owners who were giving their dog attention during the first 30 minutes arriving at home, for example by playing or feeding the dog, were associated with higher probability of SRB. Several other studies showed that attention seeking behavior of the dog, for example climbing or jumping up on the owner and whining during excessive greeting behavior, should be ignored to avoid overdependence of the dog to the owner and reinforcement of the emotional disturbance of the dog. Independent behavior of the dog should be rewarded by the owner with visual contact, petting or talking at times when the dog is relaxed to lower the probability of SRB in dogs (Podberscek et al., 1999; Appleyby & Pluijmakers, 2003; Simpson et al., 2007; Sherman, 2008; Sherman & Mills, 2008).

This study showed that non-SRB owners petted their dog more than SRB owners. Although this finding was not significant in this study, in the study of Soppe (2013) it was. It was also significant when the data of Soppe was combined with the data of this study. This could be explained by the bigger sample size in the study of Soppe.

This study also showed that female owners performed more physical interactions towards their dogs than male owners, but the large proportion of females participated in this study could influence this. There was no significant association between gender of the owner and SRB status in dogs. Although in the literature, the probability of SRB increased with the number of human adult females in the house (McGreevy & Masters, 2007).

The assumption was that female owners 'spoil' their dog more and treat their dog more like a person, which could lead to behavioral problems in dogs. However, Voith et al. (1992) showed that spoiled dogs were *less* likely to engage in behavior problems. In other studies there was also no association between spoiling activities of the owner and SRB in dogs. (McCrave, 1991; Flannigan et al., 2001).

In the study of Prato-Previde et al. (2006) women and men had similar dispositions to engage in affiliative behaviors in particular touch and physical contact. They found that physical contact plays a central role in modern human attachment and caregiving behaviors. However, in the study of Soppe male owners petted their dog significant more than female owners. In both studies there is a female bias, so the discussion should really be centered on whether it is possible to make any conclusions about gender differences in owners in either study.

The hypothesis was that SRB owners talked less to their dog, but in this study there was no significant difference between SRB and non-SRB owners in total talking. Perhaps the behavior of SRB owners was influenced because they knew they were filmed. Several studies showed that the experience of being videotaped might influence the behavior of interest. This phenomenon is known as participant reactivity to awareness of being observed. The authors advised to use multiple sessions for observing behavior because they showed that participants get used to the camera's and act more naturally (Schwartz & Garamoni, 1986; Spiers et al., 2000; Semeniuk & Riesch, 2011).

However, SRB owners performed more control talk with intonation to their dog.

Perhaps this could be explained because SRB dogs are more excited and the owner is trying to relax the dog. For example when a dog is constantly walking around the room, the owner will try to make the dog sit. A non-SRB dog is more relaxed and will usually sit without needing controls of the owner. Interestingly, there was no correlation between SRB owners and control talk *without* intonation.

Some differences between women and men were found. Women talked in total more to their dog than men. This was also seen in the study of Prato-Previde et al. (2006): women spent a significantly higher amount of time talking to their dog and were interacted verbally more when they were leaving the dog than men were. They also found that women were more likely to talk like they were talking to an infant. This suggests that in our study women had to perform more comfort talk than men. This was however not the case, in contrast in our study women displayed more control talk than men did. This difference could be explained because there was some difference in the scoring rules. In the study of Soppe control talk was scored with looking to intonation of the owner. This means that there is a big difference when the owner says 'sit' or 'go ahead, go sit'. Soppe scored the first one as control talk, but the second one not. The researcher before Soppe; Hoogendam scored both as control talk. That is why in this study both approaches were scored and called control talk with intonation and control talk without intonation. In this study women performed significantly more control talk without intonation, but this result was not significant when looking to control talk with intonation. Perhaps some of the 'controls' were meant to comfort the dog. Because of this discussion there is room for some improvement in this category in the following studies.

The finding that SRB owners were looking more to their dog and non-SRB owners were looking more to the magazine and more around the room was not expected. The hypothesis was that SRB owners would ignore their dog more. Perhaps this was due to the fact that owners knew they were recorded and they wanted to keep an eye on the dog. Non-SRB owners were convinced their dog was doing fine and therefore could read a magazine or look around the room without paying attention to the dog.

It was expected that SRB owners were more excited and were walking around the room more, this was however not the case. There was no difference in motion (sitting, walking and standing) of the owner and SRB status of the dog. However, SRB owners were sitting more facing the dog than non-SRB-owners, indicating that SRB owners may be paying more attention to their dog than non-SRB owners did.

The answers by the owners given in the enquête showed a lot of significant results. This is not surprising because the enquête was reflecting the owner's opinion and which is how we classified dogs as SRB or non-SRB dogs. However, Parthasarathy & Crowell-Davis (2006) showed that all dogs, regardless of their state of SRB, showed behavioral signs of increased anxiety when their owners left the room, like door proximity when the dog is separated from the owner. In our study this was not the case. Only one third of the SRB dogs showed anxiety when the owner was not in the room. Two third of the SRB dogs and the non-SRB dogs did not show signs of anxiety during the separation phase.

Conclusion

SRB owners versus non-SRB owners

In this study SRB owners showed significantly more touching the dog, more looking at the dog, more sitting towards the dog and control talk with intonation at the dog in contrast to non-SRB owners. Non-SRB owners were looking more to their magazine than to their dog and were looking more around the room than SRB owners. Non-SRB owners pet their dog more than SRB-owners do, but this was only a significant finding when data were combined with previous studies.

Female owners versus male owners

Female owners significantly petted their dog more, showed more physical interactions, more non-verbal invites and more talking (total, control and general talk) to their dog than male owners. But in this study there is a female bias so the results should be interpreted cautiously.

Although the hypothesis was that SRB owners tend to ignore their dog more, in this study the opposite is seen. For further conclusions about this finding more research should be done.

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Appendix

Appendix I

Checklist eigenaren met honden

Naam **Tel**
Naam hond **Ras**
Geslacht teef reu **E-mailadres:**

Vertellen aan eigenaren dat ze brief met speekselmonstername krijgen

Adres

Straat:huisnr:
Postcode..... Woonplaats

1. **Ouder dan een jaar?** Ja Nee
2. **Gezond?** Ja Nee

Zo nee, wat zijn de klachten?

3. **Medicijnen?** Ja Nee

Indien ja, wat voor medicijnen?.....

4. **Waarom denkt u dat uw hond verlatingsangst heeft? Wat doet hij/zij dan precies?**

.....

.....

- **Blaffen/huilen/piepen** Ja Nee
- **Buren klagen** Ja Nee
- **Vernielzucht** Ja Nee
- **Poepen en plassen in huis** Ja Nee
- **Hyperactief** Ja Nee
- **Eten snel opeten als eigenaar thuiskomt** Ja Nee
- **Volgen door het huis** Ja Nee
- **Aandacht vragen** Ja Nee
- **Uitbundig begroeten** (ook bij 5min weg?) Ja Nee

5. **Wordt uw hond of is uw hond pas geleden behandeld door een gedragstherapeut voor 'verlatingsangst'?**

Ja Nee

Hoe lang? medicijnen?

6. **Heeft u hond andere gedragsproblemen, bijvoorbeeld 'agressie' of andere 'angstproblemen'?** Ja Nee

7. **Is uw hond ooit agressief geweest tegen een dierenarts?**

Nooit Zelden Soms Vaak Altijd

8. Welke dagen en tijden bent u beschikbaar om naar de faculteit Diergeneeskunde in Utrecht te komen voor ons onderzoek?

Ma, di, do en vrij tussen 14.00 en 17.00u.

In weekend: bij uitzondering.

Di en do = gedragskliniek in Poli

Notes: Comments on person

9. Heeft u nog vragen?

.....

.....

Informatie

De Faculteit Diergeneeskunde, Departement Dier in Wetenschap en Maatschappij, van de Universiteit Utrecht doet onderzoek naar het welzijn van honden in Nederland. Gedragsproblemen die optreden bij honden met verlatingsangst zijn wijdverspreid in de Nederlandse hondenpopulatie en kunnen een belangrijk welzijnsprobleem zijn voor deze honden.

Doel

Het doel van dit onderzoek is om de gedrags- en fysiologische kenmerken (i.e. hartslag en cortisol) van honden met verlatingsangst te meten in een gestandaardiseerde omgeving, zoals in een dierenartsenpraktijk. Onze bevindingen kunnen zowel een bijdrage leveren voor het beoordelen van het welzijn in honden als voor het diagnosticeren van verlatingsangst in honden.

Wij zoeken:

1. Lichamelijk gezonde honden die ouder zijn dan 11 maanden;
2. Honden die ernstige kenmerken van verlatingsangst laten zien. Dit zijn gedragingen die de hond alleen vertoont wanneer hij/zij alleen wordt gelaten:
 - a. frequent en intensief blaffen, huilen en/of piepen. Buren kunnen hierover klagen;
 - b. het huis van de eigenaren slopen (bijv. bankkussens aan stukken scheuren);
 - c. hyperactief zijn: de hond gaat bijvoorbeeld krabben aan deuren en ramen en rusteloos rondlopen;
 - d. in huis plassen en poepen;
3. Honden die niet op medicatie staan voor verlatingsangst.

Wat gaat er gebeuren?

- Indien uw hond geschikt is voor het onderzoek, zal u worden uitgenodigd om naar de Universiteitskliniek voor Gezelschapsdieren te komen;
- Tijdens het onderzoek zal uw hond gefilmd worden en de hartslag van uw hond zal met een non-invasieve Polar® hartslagmeter worden gemeten.

- Aan het einde van het onderzoek wordt er wat speeksel van uw hond afgenomen voor cortisol bepaling.
- Het hele onderzoek zal ongeveer 45 minuten in beslag nemen.

Wij bieden:

- Gratis een gedrags- en fysiologisch onderzoek van uw hond.
- De eigenaar kan het onderzoeksrapport na onze analyse kosteloos toegestuurd krijgen.
- De onderzoeksresultaten kunnen de eigenaren een beter beeld geven over het aanpassingsvermogen van hun honden en hoe welzijnsbelemmerend de verlatingsangst voor hun honden is

Appendix II

AANVULLENDE VRAGENLIJST over uw hond.

Uw naam Naam hond

Tel E-mail

Ras Geslacht teef reu

Gecastreerd/gesteriliseerd Ja Nee Geboortedatum hond
Onbekend

10. Laat u uw hond wel eens alleen thuis? Ja Nee

11. Hoe lang laat u gemiddeld uw hond alleen thuis per keer?

.....

12. Waar is uw hond als u hem/haar alleen thuis laat?

Binnen Buiten Anders,

Indien 'binnen', kunt u aangeven waar uw hond zich bevindt?

Los rondlopend In een afgesloten ruimte, In een afgesloten
bench

In een kennel Anders,

13. Volgt uw hond u door het huis wanneer u *op het punt staat weg te gaan*?

Onbekend Nooit Zelden Soms Vaak Altijd

14. Valt u nog andere zaken op aan het gedrag van uw hond als u weggaat?

.....

15. Blaft, piept en/of huilt uw hond als hij/zij alleen thuis is?

Onbekend Nooit Zelden Soms Vaak Altijd

Hoe weet u dat?

16. Klagen uw burenen over het geluid dat uw hond maakt als u hem/haar alleen thuis laat?

Onbekend Nooit Zelden Soms Vaak Altijd

17. Vernielt uw hond in uw huis als hij/zij alleen thuis is?

Onbekend Nooit Zelden Soms Vaak Altijd

18. Is uw hond hyperactief als hij/zij alleen thuis is? (krabben aan deuren en ramen,
rusteloos rondlopen, hijgen)

Onbekend Nooit Zelden Soms Vaak Altijd

Hoe weet u dat?

19. Poept of plast uw hond in het huis als hij/zij alleen thuis wordt gelaten?

Onbekend Nooit Zelden Soms Vaak Altijd

20. Is uw hond moe/uitgeput wanneer u thuiskomt (na de begroeting)?

Onbekend Nooit Zelden Soms Vaak Altijd

21. Hoe begroet u de hond wanneer u thuiskomt?

Helemaal niet uitbundig 1 2 3 4 5 *Heel erg uitbundig*

Onbekend

22. Hoe begroet de hond u wanneer u thuiskomt?

Helemaal niet uitbundig 1 2 3 4 5 *Heel erg uitbundig*

Onbekend

23. Begroet de hond u ook zo als u maar heel even weg bent gegaan? (bijv. 5 min)

Onbekend Ja Nee Anders,

24. Eet uw hond wanneer hij/zij alleen thuis is? (bijv. voer, botten, beloningskoekjes etc.)

Onbekend Nooit Zelden Soms Vaak Altijd

25. Drinkt uw hond wanneer hij/zij alleen thuis is?

Onbekend Nooit Zelden Soms Vaak Altijd

26. Heeft uw hond een sterke band met 1 bepaald lid van uw huishouden?

Ja (met wie?)..... Nee Anders,

27. Heeft uw hond de neiging om u (of anderen uit uw huishouden) te volgen door het huis van kamer naar kamer?

Onbekend Nooit Zelden Soms Vaak Altijd

28. Heeft uw hond de neiging om dicht naast u (of anderen uit uw huishouden) te gaan zitten?

Onbekend Nooit Zelden Soms Vaak Altijd

29. Heeft uw hond de neiging om aandacht te vragen als u zit, door een poot te geven of met haar/zijn neus tegen u aan te duwen?

Onbekend Nooit Zelden Soms Vaak Altijd

30. Wordt uw hond onrustig (blaft/jankt, springt op of probeert tussenbeide te komen) wanneer u (of anderen uit uw huishouden) aandacht geeft aan andere personen?

Onbekend Nooit Zelden Soms Vaak Altijd

31. Wordt uw hond onrustig (blaft/jankt, springt op of probeert tussenbeide te komen) wanneer u (of anderen uit uw huishouden) aandacht geeft aan andere honden of dieren?

Onbekend Nooit Zelden Soms Vaak Altijd

32. Als u hond problemen heeft met niet alleen thuis kunnen zijn, wanneer is dit dan begonnen?

..... n.v.t.

33. Hebben er bepaalde gebeurtenissen (bijv. een verhuizing, een geboorte, uw hond naar een pension, het langdurig thuisblijven van de eigenaar) plaatsgevonden waarna uw hond problemen kreeg met alleen thuis blijven?

Ja, specificeer Nee n.v.t.

Dit is het einde van deze vragenlijst. Hartelijk dank voor het invullen.

Indien we nog vragen hebben aan de hand van dit onderzoek, mogen wij dan contact met u opnemen? Ja Ne

Appendix III

Gaze direction owner									
L/bo		Body owner							
L/c		Chair							
L/ca		Camera							
L/d		Dog							
L/dr		Door							
L/m		Magazine							
L/p		Place of the dog							
L/perb		Personal belongings, like telephone or bag							
L/q		Questionair							
L/r		Room, including floor or drinking bowl							
L/t		Table next to the chairs							
Physical contact									
H		Hug dog, holding dog of the ground (on the lap or picking up)							
K		Kiss dog							
M/h/b/l		Push/Move head/body/legs							
P/h/b/l		Petting head/body/leg							
P/hb/hl/bl		Petting head and body/head and leg/body and leg							
T/h/b/l		Touch head/body/leg							
TP/hh/hb/hl/bb/bl/l		Touch and pet head/head and body/head and leg/body/body and leg/leg							
Verbal									
V/ct		Control							
V/cf		Comfort							
V/t		Talk to the dog in general							
Non verbal interaction									
N/ct		Non verbal control (claping or pointing)							
N/inv		Non verbal invitation (arms down or clapping on legs)							
Motion of the owner									
Lp		Looking at personal belongings							
Mg		Picking or holding magazine							
O/down		Sitting down							
O/up		Standing up from the chair							
S/su		Sitting straight up, no interaction with the dog							
S/td		Sitting towards the dog							
St/pet		Standing and petting the dog							
St/x		Standing and not petting the dog							
W/c		Walking to the chair							
W/d		Walking to the dog							
W/r		Walking to the room							
Ignorance									
1		Total focus on the dog							
2		Not ignoring the dog							
3		Neutral							
4		Ignoring the dog							
5		Total ignoring the dog							
Abundance									
1		Not abundant at all							
2		Not abundant							
3		Neutral							
4		Abundant							
5		Very abundant							

The gaze direction of the owner was scored; looking at the body of the owner (L/bo), looking at the chair (L/c), looking at the camera (L/ca), looking at the dog (L/d), looking at the door (L/dr), looking at the magazine (L/m), looking at the place of the dog (L/p), looking at personal belongings (L/perb) like telephone or bag, looking at questionnaire (L/q), looking at the room (L/r) including floor or drinking bowl of the dog and looking at the table next to the chairs (L/t). Also, the physical interaction of the owner with the dog was scored: hug dog (H) including arms around the dog or holding dog of the ground like on the lap or picking up, kiss dog (K), move/push dog head (M/h), body (M/b) of leg (M/l), petting dog's head (P/h), body (P/b) or leg (P/l), head and body (P/hP/b), head and leg (P/hP/l) and body and leg (P/bP/l), touch dog's head (T/h), body (T/b) and leg (T/l) and pet and touch including one hand touching and one hand petting; touch and pet head (TP/hh), touch and pet head and body (TP/hb), touch and pet head and leg (TP/hl), touch and pet body (TP/bb), touch and pet body and leg (TP/bl) and touch and pet leg (TP/ll). The verbals of the owner were also recorded and divided in control (V/ct), comfort (V/cf) and general talk (V/t). the control was divided in control talk with- and control talk without intonation. Control talk with intonation included verbals like: 'Sit' and 'Here'. Control talk without intonation could be 'please come sit' and 'come to mama'. Comfort talk included verbals like: 'Good girl' and 'Calm down'. General talk included everything that is not strictly control and comfort. The non-verbal interaction was recorded and divided in non-verbal control (N/ct) like clapping and pointing and non verbal invention (N/inv) like arms down and clapping on legs. The motion of the owner is also scored: looking at personal belongings (Lp), picking up or holding magazine (Mg), sitting down (O/down), standing up (O/up), sitting straight up (S/su), sitting towards the dog (S/td), standing and pet (St/pet), standing and doing nothing (St/x), walking to the chair (W/c), walking to the dog (W/d) and walking through the room (W/r). Also the ignoring behavior of the owner and abundance scale are scored. Abundance is defined as the excitement of the owner. These scales were ranged from one till five being one total focus on the dog and not abundant and five total ignoring the dog and very abundant.