

Report by a PhD student Aada Ståhl, PhD Milla Salonen and prof. Hannes Lohi

**Project N202-0008: One personality - associations between owner and pet personality and well-being**

A grant (595 000 SEK) was awarded by the Agria Foundation in 2021 to Prof. Hannes Lohi and his research group to study the associations between companion animal personality and unwanted behavior, owner personality, owner-pet attachment, and owner welfare in an extensive cross-sectional questionnaire data.

The proposed project had three key aims as follows: 1) Examine the association of owner and companion animal personalities with validated owner-answered animal and human personality questionnaires, 2) Evaluate how owners' and companion animals' personalities and unwanted behavior influence the attachment bond between them with validated owner-answered animal and human personality questionnaires and validated attachment questionnaire, 3) Study the association of companion animal personality and unwanted behavior and owner well-being by owner-answered pet animal personality and unwanted behavior questionnaire and perceived stress, mental well-being, and satisfaction with life scales.

All three Aims have progressed and the results analysis of the aim 2 have been completed and is under revision in a peer-reviewed article (Ståhl, Salonen, Hakanen, Mikkola, Sulkama, Lahti, Lohi. The Role of Human and Pet Personalities and Pet Unwanted Behavior in Attachment to Dogs and Cats: an SEM approach. Manuscript under revision for *Scientific Reports*.

Two additional manuscripts are expected covering the goals in the Aim 1 under the working title “Examining the Similarity of Owner and Pet (Cat or Dog) Personalities and Its Significance for the Quality of Owner-Pet Relationship: Attachment Security” and the Aim 3 under the working title “Exploring the Relationship between Companion Animal Personality, Unwanted Behaviors, and Owner Mental Well-being”. We expect to submit both studies to peer review in the next 18 months as a part of Aada Ståhl’s PhD work. More details on the progress and dissemination in each Aim can be found below.

**Aim 2) Assessing the impact of personality traits and unwanted behavior on the pet attachment bond.**

The article is currently under revision in scientific journal *Scientific Reports*: Ståhl, A., Salonen, M., Hakanen, E., Mikkola, S., Sulkama, S., Lahti, J., Lohi, H. The Role of Human and Pet Personalities

and Pet Unwanted Behavior in Attachment to Dogs and Cats: an SEM approach. We will immediately begin issuing press releases once the manuscript is published.

**Aim 1 and 3) Identifying associations of owner and pet personalities & the association of companion animal personality and unwanted behavior and owner mental well-being.**

Examining the similarity of owner and pet (cat or dog) personalities and its significance for the quality of owner-pet relationship and exploring the relationship between companion animal personality, unwanted behaviors, and owner mental well-being.

*Summary*

The results and conclusions of these aims have not been completed yet due to ongoing additional data collection. Data has already been collected and organized for actual analyses, but we are collecting even more survey responses to reach an even more comprehensive sample size for analyzing the proposed aims. The additional data will be collected with a survey tool in the MOOC course platform of the University of Helsinki, which will be launched in September 2023. We expect to complete analyses for manuscripts in the next 18 months.

*Introduction and objectives*

The relationship between humans and companion animals, dogs, and cats, is unique both historically and emotionally. The strong attachment bond between humans and companion animals increases the welfare of both parties<sup>1-5</sup>. However, like any relationship, there may be dysfunctional elements. Furthermore, the owner's personality traits<sup>6-8</sup> and the unwanted behavior of the pet<sup>5,6,9</sup> may influence their bond. The relationship between companion animals and their owners could also be affected by their combined personalities, but this is currently unknown. Companion animals and their owners seem to resemble each other in their personalities, even when evaluated by an outsider<sup>10</sup>. However, even though some studies have discovered a resemblance in owner and companion animal personalities<sup>5,6,9</sup> some have reported that the personalities of companion animals and their owners complement, rather than resemble each other<sup>11</sup>.

In this study, we focused on personality of owner and pet dog and cat personalities. Dog personality consists of seven traits: insecurity, training focus, energy, aggressiveness/dominance, dog sociability, human sociability, and perseverance<sup>12</sup>. Our surveys include a wide range of unwanted behavior traits of dogs, from noise sensitivity to aggressive behavior, impulsivity, and compulsive behavior. Cat personality includes five traits: fearfulness, activity/playfulness, sociability toward cats, sociability toward humans, and aggression toward humans, as well as two unwanted behavior traits: excessive grooming, and litterbox issues<sup>13</sup>. The owner personality traits

include five traits: Openness to experiences, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. Attachment bond between the pet and the owner is collected with the Pet Attachment Questionnaire<sup>2</sup>, based on the attachment theory<sup>14</sup>. Furthermore, we characterize the owner's perceived stress with the Perceived Stress Scale<sup>15</sup>, and mental well-being with Short Warwick-Edinburgh Mental Well-being Scale<sup>16</sup>, Satisfaction With Life Scale<sup>17</sup>, 10-item Center for Epidemiologic Studies Depression Scale<sup>18</sup> and Generalized Anxiety Disorder 7-item Scale<sup>19</sup> (Table 2). Currently, we have gathered a convenience sample of over 2,700 Finnish pet owners for our study. However, our efforts to enhance the sample size will continue in the upcoming autumn, as we aim to recruit hundreds, or even thousands, of additional owners, including participants from international backgrounds.

### *Methodology*

In the Aim 1, we will scale the owner and pet personality traits to consistent 0-1 scales, calculate variables for the differences between owner and pet traits that correspond to each other based on current literature, and explore the association between personality differences and attachment styles using general and generalized linear models.

Aim 3 studies the association of the pet's personality and unwanted behavior with owner mental well-being with general and generalized linear models. In this aim, the response variables are the owner's perceived stress score, satisfaction with life score, mental well-being scale score, depression score, and anxiety score. These well-being variables are explained with pet's and owner's personality, the interaction between pet and owner personality, pet's unwanted behavior, and owner's sex and age.

### *Results and discussion*

The results and conclusions of this aim have not been completed yet due to additional data collection. The research will proceed as follows: We have already collected questionnaire data for the analysis of the research question. However, we will further expand the survey data during the autumn by gathering additional data through a MOOC course. A doctoral researcher Aada Ståhl has been recruited, and the research question will be incorporated into her dissertation. We anticipate the completion of the research objective within the next 18 months. We have secured funding for PhD student Ståhl until July 2024 and have applied from many additional sources.

## Literature

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