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EFFECTS OF OWNER GENDER AND INTERACTION STYLE ON STRESS COPING IN HUMAN–DOG DYADS

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If human–dog relationships are truly social, there should be distinct behavioral relationships between owners and their dogs, and even between the owner's and the dog's stress-coping style. We predicted that the interaction style of humans with their dogs as well as the owner's gender would be correlated with dyadic stress coping. Our pilot study was based on 23 (11 male and 12 female) owners aged 23–68 years, and their medium- to large-sized intact male dogs ranging in age from 1.5 to 6 years. During 3 sessions, 1 at the owner's home and 2 in a standard test room, interactions of the owner–dog dyad were observed and videotaped in different test situations. The last session included, among others, a passive stressor (mild threatening of the dog by moving toward the dog and gazing at it with the owner both present and absent) and an active stressor (leading the dog through a latticed foot path). Saliva samples for the analysis of cortisol were taken before, during, and after the sessions and during 2 control days. Behavior was coded from the videos with THE OBSERVER (Noldus).

The intra-individual cortisol concentration was consistent, so the higher the concentration was during the control days, the higher it was at the beginning of the sessions (Pearson's: $n = 23$; $r = 0.54$, $P = 0.008$ for dogs; $r = 0.660$, $P = 0.001$ for owners). There was a positive correlation between the cortisol concentration of owners and their dogs after the threat situation (Pearson's: $n = 20$, $r = 0.495$, $P = 0.027$). In female owners, we found higher cortisol levels during control days than at the beginning of the sessions (Wilcoxon: $n = 12$, $Z = -2.667$, $P = 0.008$). At the third session, men had higher cortisol levels than women (Mann-Whitney U: $n = 23$; before session: $Z =$

-2.462 , $P = 0.014$; after active stressor: $Z = -2.185$, $P = 0.029$; after passive stressor: $Z = -2.523$, $P = 0.012$). The less aggressively that female-owned dogs reacted to the threat situation, the higher the dogs' cortisol levels after this situation (Pearson's: $n = 11$, $r = 0.675$, $P = 0.023$). The more the female owners interacted with their dogs during the threat situation, the higher the cortisol concentrations of the dogs after this situation (Pearson's: $n = 12$, $r = 0.601$, $P = 0.039$).

Our results support the idea that owners and their dogs function as social teams and that dyadic stress coping of owner and dog is related. Seemingly, owner interaction style and owner gender affect situational stress levels in the dog. In further analysis, we will include more challenging situations, owner attitude and dog personality. We acknowledge funding by IEMT Austria.

Key words: human–dog interactions; dyadic challenges; stress coping; gender differences

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TOWARD THE NATURE OF THE HUMAN–DOG SOCIAL BOND

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With dogs and other higher vertebrates, humans share basic social tools, namely, the brain and physiological mechanisms and a number of evolutionary dispositions affecting social decision making. Most of these similarities are owing to common origin (homology). It is no wonder that humans and their companion animals have the potential to engage in truly social, individualized, long-term dyadic relationships. With our studies (behavior coding; experimental and questionnaire) in 40 human–cat dyads and in 23 human–dog dyads (intact male dogs with their female and male owners), we aimed at elaborating some basic principles of human–companion animal dyadic relationships. As predicted from the biological theory of long-term valuable relationships, partners in human–animal dyads mutually adjust to each other empathically, satisfy each other's social needs, and provide mutual social support, even at no evident operational function (such as dogs assisting police, the blind, or the disabled). However, as in any within-species dyadic bond, distinct dyadic asymmetries and even conflicts are also inherent to human–animal dyads. As predicted, we found that the patterns of dyadic interaction