

Are YOU Your dog? The Science.



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Are you your dog? Is your dog you? Or, elements of your personality traits anyway. Researchers set out to explore these and other queries.

Can we extrapolate from this new science to apply these questions to your human children?

Faculty from the University of Vienna's Department of Behavioral Biology in Austria sought to explore the human-dog dyad (aka a group of two -units, entities, humans, animals) suggesting owner and dog social characteristics impact each other's stress responses and thereby influence coping capacity. Recognizing the human role is more influential, they investigated "intra-individual cortisol variability" (iCV) which is regulated and adjusted by interactions that range from contentious to emotionally supportive. Heart rate (HR) and its fluctuations were also recorded and studied to be more extensively discussed in a future publication. (1)

Upon exposure to challenging scenarios, they tested 132 human and dog pairs in a lab setting by measuring HR, salivary cortisol (before, after and non-testing day control) and compiling data via questionnaires that reflected the dyad's respective personalities as well as the owner's social attitudes toward the dog and other humans. The results are predicated on the notion high cortisol variability better correlates with "efficient and adaptive coping and a balanced individual and dyadic social performance." (2)

Cortisol is a glucocorticoid —steroid—hormone modulated by a central command center in the brain (aka HPA Axis- Hypothalamic-Pituitary-Adrenal Axis) that operates in a feedback loop with the body. When a body is in balance, it is secreted in expected ranges to sustain certain basic functions like glucose (aka sugar) regulation, for example. It's routine daily fluctuations are well-known and understood.

When an individual is under extreme stress whether it be from fleeing danger or enduring a major surgery, an intact HPA axis influences release of the glucocorticoid and other stress hormones to allow the vital organs (especially) to adapt to the situation. The heart pumps faster so the brain, in particular, is well-perfused. The lungs work harder to acquire more oxygen to feed the brain. And so forth...

These alterations are permissible and appropriate in the acute crises we face. They exist for that reason. When this extreme state becomes a person's chronic and daily status, harm can be done over time— e.g. impairment of the immune system and wound healing. These investigators understand the individual-specific adaptive nature of the HPA-axis in cortisol secretion when exposed to different stimuli. Per this study, high iCV corresponded to high arousal states and low relaxation ones.

Translation: Those who were more calm at baseline and in general coped more effectively when stressed, as did their dogs.

They posit this individual HPA flexibility may be linked between relationship partners as influenced by early life experiences:

“Securely attached children respond behaviorally and physiologically adequately to challenging situations and will quickly down-regulate behavioral and physiological responses after successful coping. Along the lines of the parent-offspring model of human-dog relationships, the same principles also seem to work between dogs and their owners.”

(3)

The dogs with greater security attachment were less stressed at baseline and at play. Their conclusions being socio-positive engagements correlate with high iCV reinforcing that these owners not only have more secure relationships with their dogs but other humans too. For example, owners with high neuroticism had dogs with low iCV. This personality feature often accompanies more pessimistic viewpoints and is associated with depression and anxiety. (4) The team reiterates work done on the sensitivity of dogs to their owners and the “emotional contagion” that permits them to mirror their behavior. Additionally, this work reinforced that highly agreeable people tend to cope better likely because they are more apt to let things roll off their shoulder.

Though this study had a low sample size and might benefit from better controlling the possibly impactful pre-testing time window, it does support existing research on the interactive nature of the [health benefits of animals](#) [2], in particular, in reduction of heart rate and blood pressure along with improvements in mental health and well-being.

Social dyads albeit human-dog or parent-child can react synergistically or negatively depending on psychobiological factors. They are symbiotic relationships that have the opportunity to be mutually

beneficial. Encountering stress is an unavoidable aspect of life. To be on the side of coping with greater ease, is a purposeful goal.

The “emotional contagion” described in this study is not limited to canine interactions. This is routinely observed in pediatrics, for example. Children feed off of their parents’ reactions. When the parent is calm, the child calms. When young children sense anxiety, they mimic it and act out.

Chronic sustained high stress is known to cause profound adverse health effects. If we all can manage it better and try at least to identify different ways to do so, then we benefit ourselves as well as our loved ones. Being a canine or having one in the mix is not a prerequisite to learning this invaluable lesson.

SOURCES:

(1) (2) (3) (4) Schoberl I, Wedl M, Beetz A, Kortschal K (2017) *Psychobiological Factors Affecting Cortisol Variability in Human-Dog Dyads* [3]. PLoS ONE 12(2): e0170707. doi: 10.1371/journal.pone.0170707

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