


Enhancing wellbeing through human-dog symbiosis - links with physical, prosocial and social network development.

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Project Information	Project Number : 23H05472	Project Period (FY) : 2023-2027	
	Keywords : Dog ownership, trust and security, family relationships, wellbeing		

**Purpose and Background of the Research**

**● Outline of the Research**

The current project aims to biologically elucidate the emergent mechanisms of canine-induced well-being. Furthermore, it will clarify how valuable the canine effect is in contemporary human society.

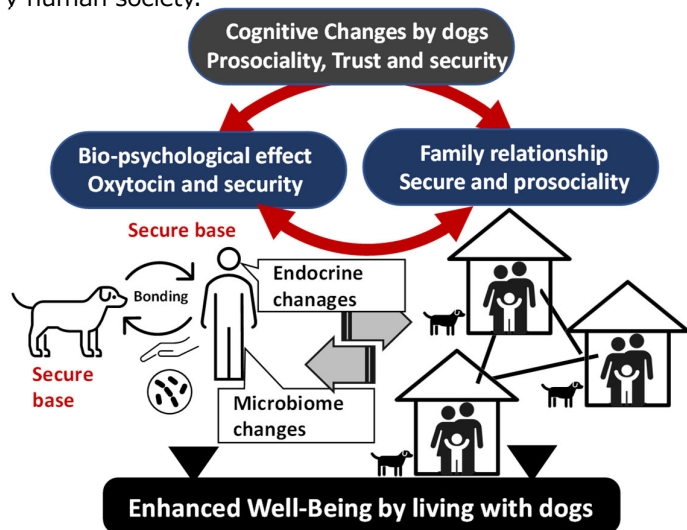


Figure 1. Outline of this project. The presence of the dog causes physical and cognitive changes, resulting in prosociality, trust and security. From this starting point, wellbeing is enhanced for owners through physicality and social relationships via the bond with the dog, and in the family and community via the formation and strengthening of community.

**● Background**

- ❑ Children owing dogs in the largest adolescent cohort in Asia showed higher values for wellbeing and higher scores for sociability.
- ❑ The microbiome of children owing dogs were implanted into GF mice, and their prosocial behavior was assessed, which showed an increase in pre-concern behavior related to empathy. In other words, the bacterial flora of the children having dogs contained microbiome that enhanced sociability.
- ❑ In parallel, we found that canine-owner interactions activated the oxytocin nervous system in both. This means that among the physical and mental changes brought about by owing dogs, such as prosocially, we found the possibility that the effects are mediated through the oxytocin nervous system.
- ❑ The presence of dogs is also known to have a facilitatory effect in connecting humans to humans. For example, the fostering of human-human trust brought about by dogs has been co-existed.

**● Research**

- 1) The intestinal microbiome in addition to urinary oxytocin as a physical characteristic will be analysed in dog owners. In addition, social psychological assessments such as public good provision game will be carried out to statistically clarify the relationship between prosociality and physical characteristics due to dog ownership.
- 2) Using cohort data from adolescents, we will longitudinally follow changes in Well-being, as well as oxytocin and microbiome, brought about by dog-ownership, and create a causal model of Well-being and physical changes.
- 3) Conduct social research on how the presence of dogs influences social networks in real local societies. In particular, investigate the relationship between local community relations and Well-Being.

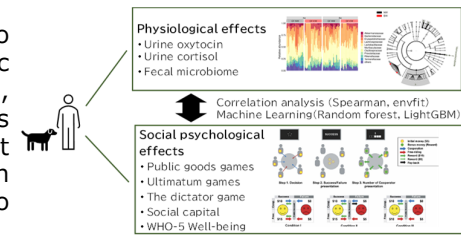


Figure 2. Outline of study 1)

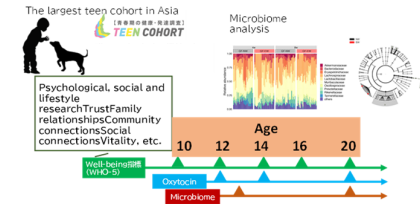


Figure 3. Outline of study 2)

**Expected Research Achievements**

**● Contribution to the future**

Looking at Japan today, social networks and social capital scores are in a very low position among developed countries. If this issue reveals the strengthening of social networks through living with dogs, it is expected to revitalize local communities and foster trust and security in Japan. It is hoped that this will lead to an increase in wellbeing in Japan.

In Japan...

- 15-year-olds rank 41st out of 47 countries in the world in terms of life satisfaction.
- In the 2020 edition of the UN World Happiness Survey, Japan's level of happiness is the lowest among developed countries (63rd in the world).
- The social capital scale, calculated from social networks, interpersonal trust and social participation, is also overwhelmingly low (132nd out of 167 countries).

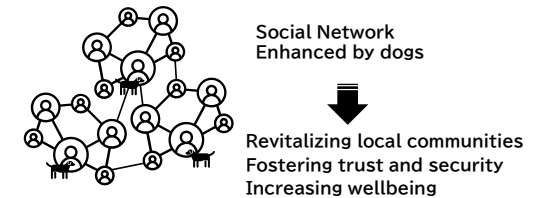


Figure 4. Contribution of this project to the future

**● Academic research question**

It is to understand the prosocial characteristics of humans, who have been living together and co-evolved with dogs, and an understanding of these characteristics will lead to an understanding of the origins of our well-being today. Competition is not the only driving force of evolution. The means of symbiosis has also driven human evolution. Ultimately, it is a search for part of the answer to the question: 'What kind of society have humans lived in and how do we live?'

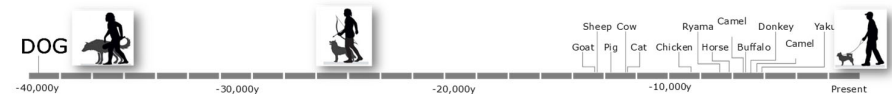


Figure 5. The long history of symbiotic and mutually beneficial relationships between humans and dogs.

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