

## **WILD BRAINS - DOMESTICATED MINDS: OPPOSITES IN WELFARE?**

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### **Summary**

Anthropomorphism implies that wild animals have the mental abilities to worry in human fashion over the chronic uncertainties and possible impending disasters of life in the wild. However such a state is un-evolvable - wild animals would be stressed out of existence! This conference broaches the concept that evolution has maintained wild brains so that this is not so. However during domestication, despite an overall reduction in brain size, human selection for useful behaviours and sensitivities may have changed key areas of the brain, creating animals with minds that no longer tolerate the wild. To take them as models for wild animals is to make the anthropomorphic error over again.

Domestic and wild animals differ in appearance, physiology and psychology, the latter being subject of this presentation. This includes directly opposed responses to crowding, humans and restraint. The dog with its ten thousand years plus of human selection must be the extreme example of domestication, its psychology so changed that even our closest relatives, chimpanzees, trail behind dogs at reading the intentions, emotions and faces of humans.

The power of human selection is dramatically illustrated by a Russian experiment where human-hating silver foxes were turned into face-licking, tail-wagging 'dogs' within 35 generations. However their brains have not been examined in detail. We have wondered what might have changed in the brain of the dog to make them more human than chimps. We suggest expansion/development of areas which in humans generate their distinctive mental attributes such as:

1. Prefrontal cortex: dorsolateral - working memory, assembling data for conscious thought; orbitofrontal - expression, recall, and imagination of emotions.
2. Parietal cortex: superior and inferior regions - quasi-spatial mental manipulation in thought.
3. Temporal cortex: superior sulcus – assembling of polysensory data active in social analysis.
4. A unique circuit involving sensory fibres, thalamic nuclei, a cortical area (the insula) – interoception (registration of signals from within the body), the basis for subjective self-awareness, .
5. Lateralisation of functions. e.g. the anterior portion of the insula, active in self-reflection.

### **Conclusion**

One would expect therefore to find some of these areas developed in domestic dogs beyond anything in wild species, emphasizing the fundamental error of treating wild animals as possessors of the same mental reactions as their domesticated relatives.

Poster references.

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