

**On this day of July 7, 2012, an international collection of neuroscientists gathered at The University of Cambridge University has been convened to reassess the neurobiological substrates of Conscious behavior in human and non-human animals. While comparative research in this topic is naturally hampered by the inability for human and non-human animals to readily communicate, the following observations have been made:**

- The field of Consciousness research is rapidly evolving. New techniques in human and non-human animals have been developed. Consequently more data is becoming readily available, which calls for a frequent reevaluation of previously held notions in this field. In non-human animals, brain circuits correlated with conscious perception in mice can be selectively disrupted to assess whether they are in fact necessary for conscious perception. In humans, new non-invasive techniques are available to survey Consciousness.
- The neural substrate of emotions does not appear to be confined to cortical structures. In fact, subcortical neural networks thought to mediate affective behaviors in humans are active during comparable behaviors in animals. Furthermore, neural circuits supporting attentiveness, sleep and decision making may have arisen in evolution as early as in insects. This convergence is behavioral as well, as invertebrates, including octopuses and jumping spiders, have been found to exhibit behavior consistent with Conscious behavior.
- Birds appear to offer, behaviorally, neurophysiologically and neuroanatomically a striking case of parallel evolution of Consciousness. Evidence of near human-like levels of consciousness has been observed in Grey Parrots. Mammalian and avian neural microcircuitries appear to be far more homologous than previously thought. Certain species of birds have been found to exhibit similar sleep patterns, including REM sleep, to mammals as well as signals generated by the mammalian cortex. Magpies have been shown to exhibit striking similarities to humans, great apes and dolphins and in studies of mirror self-recognition \_in the case of dolphins however, this ability manifests itself at an even earlier age than in humans and chimpanzees.
- In humans, the effect of certain hallucinogens appears to be associated with a disruption in cortical feedforward and feedback processing. However, pharmacological interventions in non-human animals with compounds known to affect conscious behavior in humans can lead to similar perturbations in behavior in animals. In humans, there is evidence to suggest that awareness is correlated with cortical activity, which does not exclude the possibility of contributions by subcortical or early cortical processing, as is the case with visual awareness.

**The undersigned declare the following: *“The absence of a Neocortex does not appear to preclude an organism from generating neuroanatomical and neurophysiological substrates of Conscious behavior. Consequently, mammals, let alone humans, do not seem to alone possess the neurological substrates that generate Consciousness behavior.”***