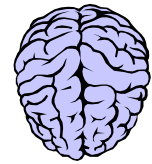


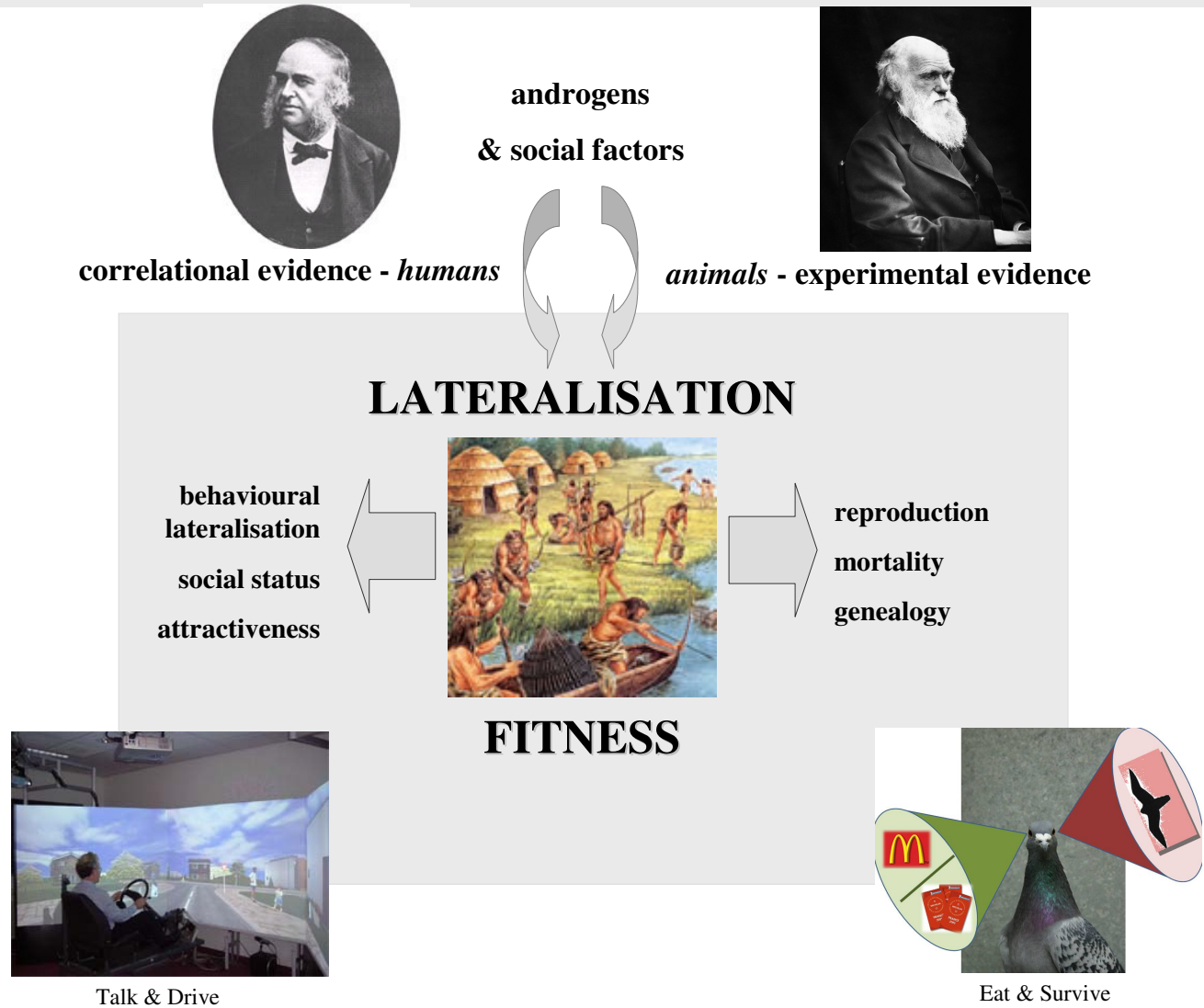
Where Broca & Darwin meet



Bernd Riedstra¹, Jessica Lust², Reint Geuze², Anke Bouma², Ton Groothuis¹

¹ Behavioural Biology, University of Groningen, P.O.Box 14, 9750 AA Haren, ² Clinical and Developmental Neuropsychology, University of Groningen, Grote Kruisstraat 2/1, 9712 TS Groningen

In the same century that Darwin developed his theory of evolution by natural selection a new field of research emerged in neuropsychology following Broca's discovery that human language is dominant in the left brain hemisphere. Since the last decade the field is extended to biology, when it became generally accepted that lateralisation, the asymmetric organisation of brain and behaviour, is widespread throughout the animal kingdom and seems fundamental to the blueprint of vertebrates. From modern human non-invasive brain research intriguing hypotheses arise about the function and evolution of lateralisation can now be experimentally tested using animal models.



This project consists of two intertwining projects that study the function and evolution of brain and behavioural lateralisation in both humans and other animals. Darwin and Broca meet in: (1) a mechanistic context, because both in humans and animals factors such as androgen exposure and social factors studied in relation to the developmental plasticity of lateralisation, (2) a functional context because in parallel projects one of the main functions of lateralisation, the ability to perform several tasks simultaneously, is being tested, and (3) an evolutionary context because our group sets out to link lateralisation measured via classical psychological methods and Darwinian fitness components in wild living birds and pre-industrial tribal societies.