NWO programma Evolution & Behaviour

Format voor Eindverslag van Preparatory Grants

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1. Participanten

To maximise benefits and minimise costs, we organised a 3-day meeting with speakers participating in three different activities: one day of academic lectures, open to all; one day of discussions, open to invitees only; and one day of intense workshops, where small teams developed grant proposals and research programmes. We found this approach worked very successfully, allowing a large number of researchers to benefit from the meeting without sacrificing in-depth, focused discussions.

Day 1: Public lectures

The lectures were given by international experts and represented a variety of themes:

Nicola Clayton (Experimental Psychology, Cambridge University, UK): "The cognition of caching in western scrub-jays"
Anders Brodin (Theoretical Ecology, Lund University, Sweden): "Does spatial memory storage affect hippocampus morphology - evidence from food hoarding birds"
David Sherry (Psychology, University of Western Ontario, Canada): "Time, place, and neurogenesis in the avian brain"
Tecumseh Fitch (Psychology, St. Andrews University, UK): "The evolution of speech: A comparative approach"
Kazuo Okanoya (Chiba University, Japan): "Sexual selection of syntactical behaviour and the origin of language"
Josep Call (Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany): "Social cognition in chimpanzees"
Celia Heyes (Psychology, UCL, UK): "Imitation as a product and a process of cultural evolution"
Kevin Laland (Biology, St. Andrews University, UK): "Social learning strategies" (Talk given by Simon Reader due to illness)
Peter Richerson (Environmental Science, University of California, Davis, USA): "Laboratory models of human cultural evolution: Some preliminary results"
Robert Boyd (Anthropology, UCLA, USA): "Modelling the evolution of social learning"

In addition, introductory talks were given by Edward de Haan (Helmholtz Research School, Utrecht University), Johan Bolhuis (Behavioural Biology, Utrecht University), and Simon Reader (Behavioural Biology, Utrecht University).

The lectures were very popular, with the meeting oversubscribed. 120 attendees came from around The Netherlands, but also from Sweden, Germany, and the UK. We attracted participants from a wide variety of fields, including economics, psychology, biology, philosophy, anthropology, and archaeology. Discussions were wide-ranging, with a common theme being the utility of the evolutionary approach to the various fields of research.

Day 2: Discussion groups

All speakers participated in the discussions, joined by invited Dutch and international experts and members of the Behavioural Biology group at Utrecht University. In all 26 participated in this valuable opportunity to discuss the ideas raised in the previous day's lectures and to identify research areas ripe for investigation. The morning discussions addressed the use of the comparative approach in studies of learning and memory, focussing on language, bird song, and food storing. The afternoon discussions looked at social intelligence, with discussion covering human cognitive evolution, the mechanisms underlying social intelligence, and the variables influencing the choice between the use of one information gathering strategy over another.

Day 3: Workshops

Working groups focused on specific topics, with the aim of developing research lines. The working groups were Richerson/Boyd/Heyes/Reader (on evolution and learning strategies), Call/Sterck/Goossens (primate social cognition), and Sherry/Gobes/Bolhuis (evolution of brain, learning and memory).

2. Inhoudelijk verslag

The meeting provided a uniquely valuable opportunity to discuss a number of thorny issues regarding cognition and evolution, bringing together different schools of thought to clarify areas of agreement and disagreement, and to develop routes to move research forward and solve contentious issues in the literature. Moreover, the extensive and intensive discussions resulted in a number of novel hypotheses, hypotheses which are now going to be tested empirically. We also developed a number of new research lines, with the range of expertise present immensely useful in ensuring that planned studies are of maximum relevance to diverse fields, are empirically feasible, and will result in significant scientific advances.

3. Eindresultaten

Delivered results from the Preparatory Grant were as follows. We thank NWO for funding this work.

New collaborations
We have begun a number of new collaborations as a result of the grant, based on the working teams formed on the last day of the workshop (see above).

Review papers
Bolhuis and Brodin have begun work on a review paper concerning the Evolution of spatial memory and the hippocampus.

Proposals in preparation
Together with two foreign groups, we are preparing a grant proposal intended for Human Frontiers.

Submitted proposals
Reader, Boyd, Donders, Heyes, Laland, Lefebvre, Meeus, and Richerson have submitted a proposal to the NWO Evolution and Behaviour programme entitled 'Living in an uncertain world: innovate or imitate?'.

Moreover, Reader has submitted a proposal to the Vidi programme ('Culture in mind: Innovation, social learning, and brain evolution'), a proposal bolstered by the extensive exchange of ideas throughout the meeting.