



THE HUMAN MIND

RESEARCH PROGRAMME 2012–2016

Programme memorandum



1 BACKGROUND

The human mind is subject to research from different perspectives in various fields of science and art. The challenge is to find a way to combine all of these perspectives for a productive interplay that provides a more comprehensive and profound understanding of the human mind. The human mind can be viewed as a cluster of functions that are developed and shaped by the ongoing interaction between man and his surroundings. The nervous system is necessary for mental development and functions, but equally as important is the social interaction between people and the impact of their surroundings and culture. In order to understand the different necessary factors and their mutual relationships, we must create bridges between the disciplines that study the human mind.

Understanding the human mind requires creative and unbiased cooperation between the humanities, social sciences and natural sciences; we need to find a common language. Considering the different functions of the mind from the viewpoint of the nervous system and neural activities will contribute to a more holistic understanding of the nature of different cultural and social phenomena. Correspondingly, human sciences deepen our interpretation of neural phenomena and help us formulate new questions. Current examples of this approach include the multidisciplinary infant and child research on early-learning processes and early interaction, the transdisciplinary research on leadership and decision-making processes, and the new language studies that combine traditional linguistic methods with neuroscientific methods and modelling. Other new transdisciplinary research areas include cognitive music research, which has produced new knowledge of the relationship between the emotions, the body and the mind. Other examples can be found within the research of cognition, communication and socialisation, as well as between these and other disciplines. From the standpoint of education and competencies, it is important to gain a deep understanding of the way in which the human mind learns under as natural circumstances as possible.

Recently, research on the human mind has seen new breakthroughs which, on the one hand, explore the mind's relationship to its neural basis and thereby to different physical processes and, on the other hand, shed light on the relationship between individual mental processes and the various networks of meanings related to communities, cultures and society. Many researchers are interested in brain function under natural conditions and in interaction with other actors and factors. Life sciences and medical sciences have introduced new methods for brain imaging; methods that facilitate the measuring of human functions and emotions in experimental conditions with the stimuli resembling the real world. The endeavour is to examine, more fully, the impact of environmental factors on human development. Evolutionary and developmental psychology have studied the behaviour, communication and sensory systems of fetuses and newborns.

We have gained a better understanding of the coexistence, interaction and dependencies between biological and cultural processes, and recent experimental results have shed new light on this area of study. Within cultural and social research, interest has been increasingly focused on looking at naturalistic and evolutionary explanatory models alongside the constructionist approach emphasising the social formation of reality. The mind, consciousness and awareness are often viewed as being relational or localised, whereby the mind's relationship to the functional and organic body and environment becomes emphasised. In the area of art research, evolutionary and neuroscientific perspectives have introduced new approaches to the functions concerning the transmission of aesthetic meanings and artistic expression within human interaction.

1.1 RESEARCH IN FINLAND

Finland has excellent possibilities to reach the international top in the area of multidisciplinary research that studies the mind and its neural mechanisms within a cultural and social context. The groundwork for Finnish research on the human mind has been laid by the NEURO research programme (2006–2009) of the Academy of Finland; the Mind Forum (2007–2008) funded by the Finnish Cultural Foundation, and the Academy's ongoing research programmes such as SALVE (2009–) and SKIDI-KIDS (2010–). The FinnSight 2015 joint report of the Academy of Finland and Tekes, the Finnish Funding Agency for Technology and Innovation, states that one essential area for development is “basic research and applied research on the development and activity of the brain and the human mind, particularly when linked to interaction research”.

Finland has a tradition of high-quality neuroscientific research linked with research on the human mind, with a particular focus on the development and adaptability of the nervous system, learning, memory and the neural mechanisms involved in sensory perception. Internationally, strong areas of research concerning the human mind include psychiatry, phenomenology, mind philosophy, linguistics, cognitive psychology and music research, early interaction research, philosophical psychology, neurobiology, emotional philosophy and conceptual history, computer science and formal logic.

Even though there are several units in Finland that are performing cutting-edge international research on the human mind, they operate separately, and the research resources in the field are scattered. The Academy's Research Programme on Neuroscience (NEURO, 2006–2009) focused on research on the development, function and diseases of the nervous system. Upon completion of the programme, it became clear that there is a need for a new type of synergy between the Finnish top research teams. It is also necessary to further deepen and expand the interaction between individual researchers in the field in order to facilitate an even more diverse approach to research on the human mind. The Research Programme on the Human Mind is expected to give rise to multidisciplinary projects and emerge synergy between projects in a way that would not be possible through the Academy's other funding opportunities.

2 OBJECTIVES

The primary objective of the Research Programme on the Human Mind is to produce new and more comprehensive knowledge and a broader understanding of the human mind, its neural basis, development, support, adaptation and functioning within a cultural and social context. The programme highlights the dialogue between the disciplines represented by the Academy's Research Councils, and will bring together researchers from a number of different research fields by, for example, combining methodologies and networking both nationally and internationally. The aim is that the projects within the programme apply and genuinely combine modern and relevant methods from the research traditions of the natural sciences, humanities and social sciences, and the philosophy of mind. The Academy particularly welcomes projects that combine two or more disciplines with clearly different methodologies and approaches.

The programme will encourage researchers to develop research methods and use them in a more integrated way within different disciplines. This refers to, for example, the development of such

methods by which we can, in a controlled and automated manner, study and measure various phenomena of the human mind, interactions between individuals and the brain mechanisms on which these interactions are based under natural conditions by using, for instance, video or audio recordings. The aim is to develop new signal processing methods for the analysis of brain responses and external reactions to annotated recordings. In order to gain a better understanding of the human mind, the programme will also seek to numerically and logically model brain functions, interactions between individuals and social networks at the levels of information processing, neural mechanisms, the brain, the individual and the community. It is essential that the analysis and interpretation of the data make good use of multidisciplinary approaches.

3 THEMES

Alongside the solid experimental approach and exact methods of the natural sciences, the strengths of cultural and social research include the identification and analysis of semantic relationships and contexts inherent to the human mind. The mind is a key concept in all areas of cultural and social research – as in all human sciences. Within the research programme, the different fields benefit from each other and offer each other tools for the formulation of more advanced hypotheses. Central to the programme is the effort to combine an explanatory and hermeneutic research approach, quantitative and qualitative research, and perspectives and methodologies used in the natural sciences, humanities and social sciences. The programme offers a solid framework for interdisciplinary research, and should strive for a multidisciplinary approach within all its sub-areas.

The human mind shall be the research subject in all projects within the research programme. The use of animal models for the overall understanding of the development and function of the mind is allowed.

The programme's thematic areas are:

1. Mind development, growth and learning: biology and developmental psychology related to mind development; prenatal development; the mind, genes and epigenetics; understanding; learning and its preconditions and obstacles; origin and the development of morality; upbringing, critical attitude and cognitive and functional norms; play and imagination; emotions, body and mind; brain and mind adaptation; the development of rationality.
2. Mind, expression and language: relationships between mind, brain, body and the environment; relationship between mind, language, world view and values; the environment, memory and identity; linguistic and non-linguistic thinking and communication; artistic expression and communication; multilingualism; individual and collective creativity; consciousness; the philosophy of mind and its history.
3. Mind and health: premises for a healthy mind; understanding and supporting an un-sound/abnormal mind; an ageing mind; effect of different treatments on the mind; role of emotions in mind development and rehabilitation; tailored rehabilitation; ability to test realities and disorders in it; altered states of consciousness (sleep, hypnosis, hallucinations); addiction; responsibility.
4. Mind, experience and interaction: social behaviour and human interaction; digital environments and the mind; individual and group decision-making; emotions in decision-making;

aesthetic and ethic experiences and interaction; manipulation; sharing, experience and controlling of emotions; controlling and regulating one's own mind; meditative and religious experiences; forms of intersubjectivity and how they are culturally maintained; interaction between man and machine; supported cognition; extended and social cognition.

The different thematic areas are not exclusive of one another. The projects may cover several of the themes or parts of them.

4 SOCIAL IMPACT

High-quality research on the human mind calls for a multidisciplinary approach. It is paramount that natural scientific and humanistic research traditions can converge. Besides stepping up basic research, the research programme is also expected to contribute new knowledge for, among others, teaching practices for children and adults, child welfare, the diagnosis and treatment of social disruptions, the care of older people with memory problems and the rehabilitation of people with mental or neurological disorders. Mental illnesses and learning disabilities give rise to significant social costs and human suffering, both of which could be diminished. Research within the programme may also respond to the challenges of life-long learning and help people retain their working and learning abilities throughout their lifetime. One particular challenge is presented by the changes in a person's operational environment and their impact on an individual's cognitive abilities, such as memory. Research on the human mind may provide us with significant socially advantageous results that, in the best case, will increase human wellbeing and improve the quality of life, in addition to providing an economic benefit. The research programme is also a response to the grand challenges defined by the Board of the Academy (see 5.2).

5 IMPLEMENTATION

The research programme is an interdisciplinary undertaking in research into the human mind and cuts across the domains of the Academy's four Research Councils. The Research Council for Biosciences and Environment, the Research Council Culture and Society, the Research Council for Natural Sciences and Engineering and the Research Council for Health have all contributed to the preparation of the programme.

5.1 FUNDING

The Research Programme on the Human Mind (MIND) is funded and coordinated by the Academy of Finland. The programme is scheduled to run for four years, with funding provided from 2013 to 2016. Through the programme, the Academy provides funding for multidisciplinary research conducted by research projects and consortia. A research consortium is a collaboration of independent fixed-term projects working under a joint research plan by combining different methods and research fields with a view to achieving greater added value than is normally achieved from project collaboration. The first call announced under the programme will aim to reach 11–15 projects for funding, with a funding authority of EUR 10 million in 2012. The Academy is also negotiating on possibly opening an international call in 2013. If such additional call is launched, information on the funding partners, timetable and

application process will be given separately. The research programme is expected to support national collaboration and networking.

5.2 NATIONAL COOPERATION

The research programme will support research around the grand challenges defined by the Academy Board as areas that will be given priority focus in research, including A Healthy Everyday for All, the Ageing Population and Individuals, the Dialogue of Cultures, and Knowledge and Know-how in the Media Society. The programme will also actively collaborate with other Academy research programmes, such as Responding to Public Health Challenges (SALVE) and Health and Welfare of Children and Young People (SKIDI-KIDS). Among the Strategic Centres for Science, Technology and Innovation, at least the Strategic Centre for Health and Well-being (SalWe Ltd) may have a role in research into the human mind. Potential for cooperation may also emerge with other strategic centres. Negotiations on funding cooperation are considered with various Finnish foundations and ministries, for instance.

5.3 INTERNATIONAL COOPERATION

The research programme aims to selectively establish cooperation with research funding bodies in other countries that are committed to supporting leading-edge scientific research and that are recognised as attractive partners for Finnish research into the human mind. The programme plans to launch a second, international call in 2013. Potential partner countries that have been identified as interesting with respect to research into the human mind include Canada, the US, Japan, the UK, the Netherlands and Germany. Decisions on later international cooperation and any separate calls for international joint projects will be made separately. The programme will also consider the Joint Programming Initiative in Neurodegenerative Diseases (particularly Alzheimer's disease) and its activities. In addition, the Academy of Finland is participating in ERA-Net NEURON II (www.neuron-eranet.eu) funded through the EU Seventh Framework Programme for research and is responsible for the work package "Young scientist support". ERA-Net NEURON II will arrange calls for joint European projects in the field of disease-related neurosciences in 2012–2015. Any Finnish projects funded through ERA-Net NEURON II will be linked by the programme coordination with the Research Programme on the Human Mind.

5.4 TIMETABLE

The Academy will fund individual projects and consortium projects within the programme for a maximum of four years during 2013–2016. The funding period is normally four years, starting 1 January 2013 and ending 31 December 2016. A detailed timetable for the call and the review of applications is described in Chapter 6. A kick-off seminar will be arranged together with the other funding bodies in late winter or early spring 2013. During the preparatory stage, the Academy has negotiated with a number of foreign funding bodies on possibly opening a second call in 2013. If this international call is launched, more information on the funding bodies, research themes, timetable and application process will be posted on the Academy's website in 2013.

The evaluation of the programme will be carried out in 2017. For more information, see Chapter 5.7.

5.5 PROGRAMME STEERING GROUP

The research programme is run by a steering group composed of members of the Academy's Research Councils and other expert members. Additional experts may also be invited to the group. The duties of the steering group are:

- to prepare the programme and submit to the programme sub-committee a proposal on projects to be funded
- to make a proposal to Academy Research Councils and other funding bodies on any new calls and/or additional funding
- to manage and monitor the programme
- to steer and support programme coordination
- to be responsible for the final evaluation of the programme
- to promote the application of the programme's results.

5.6 COORDINATION

The research programme strives to support and promote the development of the selected projects into a coherent and cohesive structure through cooperation and exchange of information. Programme coordination is the responsibility of the steering group and the programme managers and project official appointed by the Academy of Finland. They are responsible for ensuring this development, and work closely with the projects to facilitate the attainment of the objectives set for the programme. The aim is to ensure that the projects reinforce each other and that the programme generates new multidisciplinary research knowledge. Consequently, the principal investigators of the projects selected to take part in the programme will be required to commit themselves to the programme objectives and to cooperate actively throughout the programme and during the programme evaluation upon its completion.

The principal investigators of the projects shall:

- assume responsibility for and report on the scientific progress of the project and the use of the funds in accordance with the instructions of the programme manager and relevant funding bodies
- see to that the whole research team attends all meetings, seminars and workshops organised by the programme coordination, and facilitate cooperation and exchange of information between the research teams within the programme
- take part in producing reviews, syntheses and information material around the research programme, and actively disseminate information about the programme's progress and results on public and scientific forums.

During the course of the programme, the research projects will participate in events arranged together with end-users of the research results and in any other activities designed to provide information to different stakeholders.

5.7 EVALUATION

The implementation and results of the research programme will be evaluated upon its completion. The implementation of the evaluation will be planned in detail as the programme progresses, but the evaluation is likely to consider at least the following aspects:

- attainment of programme objectives
- programme implementation (coordination, role of steering group, participation in programme)
- evidence of impacts pursued by the programme
- national and international cooperation
- publicity and visibility of research conducted within the programme.

The evaluation may be carried out as part of a more extensive evaluation of several Academy research programmes or other national programmes and in cooperation with other national and international actors.

The research teams receiving funding are required to report on the progress of their projects on an annual basis in accordance with the decision of the steering group and to submit a research report to the Academy of Finland upon project completion. The reports shall include information on, for example, scientific publications produced and theses and doctoral dissertations completed within the programme.

6 APPLICATION GUIDELINES AND REVIEW CRITERIA

The Research Programme on the Human Mind has a two-stage call. At the first stage, applicants submit letters of intent including short plans of intent (see guidelines in the Academy's April 2012 call for applications, Appendix 1B). The deadline for letters of intent is 25 April 2012 at 16.15. The deadline is non-negotiable. The steering group will make a proposal to the programme sub-committee on projects that, on the basis of the letters of intent, would best fit in with the programme objectives. The projects selected to proceed to the second stage (to submit full applications) will be notified of the steering group's decision in June 2012.

Applicants requested to submit full applications shall prepare a complete research plan and submit it in the Academy's online services no later than 17 September 2012 at 16.15 (see guidelines in the Academy's April 2012 call for applications, Appendix 1A). The deadline is non-negotiable. On the basis of the scientific review of the applications and considering the programme objectives, the steering group will prepare a proposal to the programme sub-committee on the projects to be funded. The programme sub-committee will make the funding decisions in December 2012 at the latest. Any other international joint calls will be carried out according to a timetable to be agreed upon separately with the funding partners.

The letters of intent will be reviewed by an expert panel composed of members of the steering group and foreign experts. The full applications will be reviewed by an international expert panel.

The applications are reviewed in accordance with the Academy's general review criteria for research programmes (see www.aka.fi/eng > For researchers > Processing and reviewing applications, and

www.aka.fi/eng > For researchers > Review of applications). Besides the general review criteria, special focus will be placed on interdisciplinary and multidisciplinary approaches, as described in Chapter 2. This aspect will be considered under section "Relevance of the project to the research programme" of the review form.

7 MORE INFORMATION

This programme memorandum is available in PDF format on the Academy's website at www.aka.fi/mind.

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