

Evaluation of the social interaction: a cognitive neurosciences approach large grant

Executive summary

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The Social Interaction: A Cognitive Neurosciences Approach Large Grant was a scientific research programme investigating the psychology of first impressions and their consequences. Jointly funded by the Economic and Social Research Council (ESRC) and the Medical Research Council (MRC), the Grant was based at the University of Glasgow, initially in the Department of Psychology then for the final year in the Institute of Neuroscience and Psychology. The Grant was funded from January 2008 for four years with a cash limit of just under £4,000,000. The Grant had five primary objectives each linked to one of five strands in the Grant:

- Objective one (strand one: 'social signals by face, voice and bodily motion'): to investigate the immediate processing of social signals originating from the voice, face and bodily movements.
- Objective two (strand two: 'alignment based on social signals'): to examine how such signals support the automatic interactive alignment of social behaviours (associated with pupil dilation, blinking, yawning etc).
- Objective three (strand three: 'modulation of attention and action by social signals'): to investigate the social signals that guide co-ordinated action, and asks how our brains allow separate people to act as one.
- Objective four (strand four: 'modelling social judgments'): to develop a mathematical model to capture the relationship between the processing of social signals and the formation of key social judgements relating to emotion, trust and desire to affiliate with interacting partners.
- Objective five (strand five: resources strand): to create a model capable of generating the full range of human facial expressions including expressions of emotion (anger, disgust, fear, happiness, sadness, and surprise), degrees of emotional intensity and conversational stance (such as agreement, puzzlement and dissent). In addition, to produce an extensive archive of behavioural and neuroscientific data (from fMRI, MEG, EEG) for a pool of participants tested across strands one-three, which will provide a unique source for testing individual differences in neural mechanisms underlying social interactions.

This report presents the findings from an evaluation of the Grant, which was commissioned by the ESRC in order to provide a rigorous and independent assessment of the scientific achievements and non-academic impact of the research, and the effectiveness of the Grant as a means of organising and enhancing the work. The report provides: accountability to the ESRC and MRC for their investment in the Grant; feedback for those supported under the Grant; through publication of the executive summary, information and guidance for those in academic, policy and practitioner communities; and guidance on future research priorities in the area covered by the Grant.

The evaluation methodology involved: an analysis of the Grant's reports and publications; a review of referee's comment; semi-structured interviews with the principal applicant (PI) and co-investigators, members of the Grant's Advisory Group, post-doctoral and PhD researchers, and non-academic users.

The overall conclusion of this evaluation report is that the Grant was largely successful in fulfilling its main objectives and that it was very successful and productive in terms of its' academic achievements. The Grant's successes can be summarised as follows:

- The scientific output of the Grant was in part exceptional and will help to shape the field of Social and Affective Neuroscience, which has become increasingly important internationally over the last ten years.
- The Grant has produced high quality academic outputs, including papers in *Proceedings of the National Academy of Sciences (PNAS)*, *Current Biology*, and *Trends in Cognitive Sciences*.
- Although it is not possible to say where the Grant will ultimately be seen to have made its greatest contributions, the cross cultural research into immediate recognition of facial expressions of emotion and the research on voice averaging and judgements of vocal attractiveness are clear highlights.
- The Grant made potentially important methodological contributions. In particular, the techniques for creating stimuli in the field of face and voice perception are likely to have a significant international impact.
- The Grant was very successful in building research capacity through the development of post-doctoral researchers and PhD students who were provided with opportunities to work on the projects. Several of the post doctoral researchers and research students have conducted high quality research and have gone on to a range of posts in academia, some of which involve long-term appointments.
- The work of the Grant has been sustained within the Institute for Neuroscience and Psychology at the University of Glasgow and has led to the development of international collaborations with leading researchers around the world.
- Overall, the Grant broadly fulfilled its obligation to disseminate its findings to both academic and non-academic audiences. The Grant was particularly successful in terms of disseminating research findings to its primary academic audiences. It produced 42 academic articles, including several in high impact international journals, and presented in the region of 100 papers at international conferences. It also organised four meetings/symposia, which were primarily targeted at the academic community.

Those aspects of the Grant which were less successful are as follows:

- The Grant was not as successful as it could have been in promoting collaboration between its constituent strands and projects.
- The Grant does not appear to have built links, or established collaborative studies, with researchers based in a number of the 'secondary fields' identified in the communication strategy, including Economics, Finance, Social Policy and Law.

- There were shortcomings in relation to the Grant's engagement with non-academic groups in the industrial sector; the Grant had little impact in this area. None of the anticipated links with telecommunications, security, games, financial and media industries materialised. This was attributed to the economic downturn in Europe but was also due to the fact that the team did not attach sufficient importance to this aspect of the Grant. However, it is too early to reach conclusions about the non-academic impact of the Grant as, one year after the end of the Grant, there are clear signs that the Grant's research findings will be taken up in the security sector.
- The communication and dissemination events targeted at the general public did not reach beyond the immediate vicinity of the host university.

Recommendations

- Applicants for Large Grants should demonstrate how investigators and researchers will collaborate and benefit from their individual projects being situated in a larger programme. As one of the referees' states: "this relates to a fundamental question about Large Grants: investments of this size in a single programme must reap benefits beyond what could be achieved with the standard project grant approach. (I reckon the ~£4 million invested here would be equivalent to roughly eight such project grants in the social neuroscience area)".
- Applicants for Large Grants should be required to undertake comprehensive and systematic risk assessments during the commissioning process in order to clearly identify: factors that could jeopardise the success of the Grant in achieving its objectives (including recruitment issues, co-investigators leaving the host university to take up posts elsewhere and illness of key members of the research team); preventive measures to reduce the likelihood of these factors occurring; and strategies to deal with them if they arise to minimise negative effects on the achievements of the Grant.
- The ESRC should work closely with Large Grants to ensure that the non-academic impact of the research findings remains central to the grants' activities. One possibility would be to place more emphasis on the applied side after the first two years of a grant. For example, it might be helpful to have a meeting built into the project plans for Large Grants, say after two years, to brainstorm potential applications of the emerging research findings. The meeting could be a one-day event, possibly including relevant external parties. It would also be helpful if Advisory Groups included representatives of non-academic user groups identified in non-academic dissemination and impact strategies, as they could provide advice and guidance in relation to disseminating the research findings to non-academic users and identifying potential practical applications of the work.
- Given the scale of the investments in Large Grants, the ESRC should ensure that grant holders develop and implement non-academic dissemination strategies that reach across the UK.
- RCUK should offer training or other instruction on dissemination to non-academic audiences and/or assist researchers' own institutions in providing such training.
- Grant holders should systematically evaluate communication and dissemination activities in order not only to document and assess the impact and quality of the activities but also to identify what works well or not so well and why.

- Greater clarity and transparency is needed in relation to the ways in which the research outputs of ESRC-funded research grants are reported. In particular, grant holders should highlight papers that have not been supported solely by ESRC grants and clearly link research outputs to specific strands and projects.
- ESRC should ensure that clear guidance is given to grant holders in relation to the structure and content of the final reports of Large Grants in order to ensure that the reports are fit for purpose and provide accountability to the ESRC for these large investments.
- Synergies emerged after three years and in some cases projects did not come together until towards the end of the four-year term of the Grant. In view of this, the possibility of grant extensions based on grants making exceptionally good progress is worth considering. Extensions could range from one year to five years. These would be motivating for research teams and could well be used to increase both the academic and non-academic impacts of Large Grants. Extensions would reduce the risk of research teams quickly fragmenting and of the progress of researchers being impeded due to the need to acquire research funding.
- In order to increase understanding of the relationship between brain activity and social behavior it would be valuable to encourage greater interdisciplinarity, particularly through projects involving scholars from both neuroscience and Social Psychology. This point was made by several of those consulted during the course of the evaluation. It would also be valuable to support research that involves the development of neuroscience methods and techniques that can be applied to multiple people simultaneously.