



## Understanding Individual Behaviour: Exploratory Networks (UIBEN)

### Background and summary

The ESRC, with the support of BBSRC and MRC, invites applications for innovative exploratory networks (ENs) in the area of 'Understanding Individual Behaviour' (UIB). Many of the major challenges facing UK society depend on improving understanding on why people behave as they do and how to maximise the effectiveness with which individuals can take control of their own lives. The leading edge is to bring together the different groups of scientists from very different perspectives into a meaningful scientific endeavour which adds value via its interdisciplinary approach. The complexity of analysing human behaviour, as well as the challenges of cross-disciplinary working, both within and between the biological, physical, biomedical and social sciences, means achieving this aim will be especially demanding.

'Understanding Individual Behaviour' is one of the ESRC's key research challenges <http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/about/strategicplan/> and is a significant, long term research challenge which will require a diverse range of inputs. The challenge was originally identified following a wide ranging consultation on priorities by the ESRC. In preparation for this call, the ESRC has held two workshops which included a broad range of stakeholders including representatives from other funding agencies.

This call is for new bids for pump priming activities to support Exploratory Networks. The pump priming funding is intended to encourage the development of interdisciplinary networks, innovative research ideas, the conduct of pilot and proof of principle studies as preliminary investigations, and putting together more substantial bids for funding of interdisciplinary collaborations. For the Research Councils, these more substantial proposals may be made in the responsive mode or to particular calls as advertised. The Councils are committed to ensuring timely and appropriate consideration of multidisciplinary proposals (see <http://www.rcuk.ac.uk/research/multidis/peer.htm>). The fulfilment of the aims under this challenge is likely to require the input of those from a wide range of disciplinary backgrounds, particularly biological and medical scientists, and therefore this call is made with the support of BBSRC and MRC, who are willing to co-fund high quality applications on a case by case basis. There is also the potential for other funders to contribute depending on the focus of the networks and availability of funds.

### What work is eligible within Networks:

- Focussed attempts to address research language barriers and cross-fertilisation of ideas, methods, practices and technologies to encourage creative approaches to research and research processes;
- Development of this interdisciplinary dialogue through support for workshops, exchanges and other networking activities,
- Pilot work to facilitate developments to better understand behaviour through subsequent longitudinal studies
- Exploratory work focused on methodological and technological developments
- The conduct of proof of concept studies as preliminary investigations

- Development of more substantial bids for funding of interdisciplinary collaborations and synthesis work (see below)

It is expected that networks will cover a range of activities within the above rather than focus on one particular activity. Network funding cannot therefore be sought for stand alone research work, and any pilot/ exploratory research work should be embedded within a broader network application. Costs associated with co-ordination of individual networks may also be included (this is separate to overarching co-ordination, see below under ‘Overarching Synthesis’). This call is not meant for submission of applications which could otherwise be considered through the Research Council’s standard responsive mode schemes. Any applicants deemed to fall within this scope will be advised to submit through the normal responsive mode routes.

### Key Issues

In addressing the central question: *"How can we best develop the integrated study of the social and biological influences on behaviour of individuals?"*, the following overarching issues have been identified as being critical both to our understanding of human behaviour and to the practical implications of such knowledge beyond academia. UIBEN applications will be expected to address at least one of the following in the course of their activities:

- **Timing over the life course** – Research over the life course is a grand challenge for the Research Councils. Human behaviour unfolds across time, and so study across the life course is an important consideration. Behaviours need to be studied across key stages in the life course, such as adolescence, to be able to account for risk at key change periods. It is also important to establish at what stages different factors have an influence on individual behaviour and when any needed interventions might best be timed, informed by knowledge of when behavioural habits are formed. Significantly, new technologies mean that a sophisticated analysis of ante-natal influences on later life outcomes and behaviours can be considered as part of this. Optimal health, wellbeing, ageing and developmental biology are key areas of concern across the Research Councils, all of which can gain from a better understanding of age related behaviours.
- **Decision making and risk taking** – How much control we really have over our own decision making and risk taking, and what role of learning plays are key issues for further exploration. Other important issues include how existing knowledge and personal values impact decisions; what the causal factors are which lead to more logical decision; how we know how to find out more and if the decisions we make are intuitively already highly adaptive to our situation. Insights can be gained through looking at which parts of the brain play a role in achieving more effective decision making and appropriate risk taking and how we harness such information. Greater understandings from research of causal factors and processes may suddenly make human behaviour look more predictable or more chaotic. Combining knowledge on human decision making and risk taking is vital in helping people more effectively estimate and manage acceptable risks.
- **Adaptation, wellbeing and resilience** – These themes were initially developed in a helpful way in the Foresight Report into Mental Health and Capacity. Important issues include; the extent to which are we pre-disposed to acting in a particular way how resilient we are to change and how we react behaviourally to life events and/or interventions. How could research help people better adapt to changes during the life course to help the individual more effectively control their lives? What are the conditions conducive to happiness and wellbeing and how does this relate to an individual’s decisions and behaviour?
- **Innovative methodologies and new technologies** - What we can **now** do in new ways is look at the underlying brain processes. However, it is often very hard to integrate groups to study across the lifespan, for example, it is not easy for

neuroscientists to work on a temporal level and model behaviour across time due to the nature of their methods. Methodological innovation is needed to enable the study of behaviour on a reduced timescale. In addition, consideration is needed of how to integrate social science data with what we know about an individual's genetic and epigenetic make-up. How could technology enhance our understanding of individual behaviour in a way, which takes account of the social, and the biological?

- **Longitudinal data** There is a growing cluster of high quality longitudinal data available for secondary analysis in the UK. Crucially, this is beginning to include genetic and biomedical data and the combination of this with socio-economic data which would be a powerful resource. There are the practical, methodological and ethical challenges to using this data for research purposes. Therefore, this call would support developmental or pilot work that focuses on issues faced when considering the challenges involved in collecting, integrating and analysing genetic and social data within longitudinal studies. Examples of work that might be supported include the assessment of methodological and practical challenges, or establishment of dialogue and protocols between interested parties. This work may inform the development of new resources, such as the UKHLS.

### **Application Areas**

In addition, development of ideas through initial workshops led to the identification of exemplar thematic areas which applications might focus on. These are summarised below (more details on possible areas or key questions within each theme are listed in **Annex 1**):

- i) **Health Behaviours**
- ii) **Financial and Economic Behaviour**
- iii) **Learning, Education and Symbolic Systems**
- iv) **Fertility and Reproductive Behaviour**
- v) **Criminal and Antisocial Behaviour**
- vi) **Sex Differences**
- vii) **Environment and Behaviour**

The number of areas reflects the far-reaching potential focus of this challenge. Applications can focus on one or more of these exemplar areas, take a more overarching approach, or suggest an alternative approach or application area to exploring the key issues identified under the challenge. Applicants are encouraged to think innovatively about interdisciplinary exploration.

### **Network Mechanism**

Applications for networks should:

- Clearly demonstrate the research scope for the Network and demonstrate clear objectives for the Network over and above those achievable by individuals or existing Networks.
- Demonstrate the research basis for the Network in the context of current and prior international research in the field. Networks should be based in the UK, but collaborations with those based outside the UK are welcome.
- Include details of the initial membership of the proposed Network and the intended contribution from each member (Networks should preferably be a new collaboration, but could be based upon an existing Network, provided that the proposal explains the added benefit of funding the existing Network rather than a new Network).
- Demonstrate that collaboration between the identified researchers / disciplines are essential for the development of research in this field.
- Describe how the Network will be mutually beneficial to all disciplines involved and develop the research interests of all participants

- Undertake synthesis work as part of their proposed activities, potentially to include: sharing ideas between people who would not otherwise be drawn to working together; production of summaries of understanding for academic, policy and practice audiences; consideration of gaps in current knowledge and future research needs
- Include targets and performance indicators that will allow the Network to be evaluated, both at the end of the period of the proposed grant and in the longer term.
- Set out activities that will achieve the objectives of the Network, giving details of organisational responsibility.
- Demonstrate outreach: the intention to engage further interested researchers from outside the initial core of the network – it is expected that a proportion of activities should be publicised and available to external participation, either open or by reference to stated selection criteria.
- Describe plans for communication beyond the Network itself.

### **Outputs**

While part of the purpose of the networks is to facilitate dialogue, it is expected that Networks will be able to produce tangible outputs that are applicable to a wide range of audiences and may facilitate others working in a similar area. Applicants should clearly detail what the outputs will be in the case for support section of their application form.

### **Overarching Synthesis**

The ESRC recognises that synthesis of a broad range of work in this area will be a valuable endeavour. As study of human behaviour often happens in disciplinary silos, or within particular topic areas, the opportunities to provide for emergent ideas and concepts that could be pieced together to inform a broader understanding is often missed. Therefore, in addition to synthesis work to be undertaken within individual networks, the ESRC is seeking an individual who can undertake a more cross-cutting role. The aim of this function is to facilitate dialogue between the exploratory networks awarded under this call and undertake a higher level synthesis including co-ordination of the meeting between Network grant holders to take place in Late Spring/Early Summer 2009. This will ensure the maximum possible cross fertilisation of ideas. Any individual applicants seeking to take on this additional responsibility would be expected to be part of a network and should include indicative costings in the network proposal for this ‘overarching synthesis’ activity.

It is expected that an individual will be required to work at approximately 20% time for 6-9 months for this task.

Individuals wishing to undertake this overarching synthesis who are not planning to be part of a network application should contact the ESRC to discuss.

### **Making an application: administrative guidance**

#### **Timeline and Budget**

Networks will be commissioned through to late 2008, with grants expected to start between January and April 2009. A summary timetable is as follows:

Call Opened	23 <sup>rd</sup> June 2008
Expressions of Interests submitted by	3 <sup>rd</sup> September 2008
Closing date for applications	23 <sup>rd</sup> September 2008
Expert panel meet to discuss proposals	Mid November 2008
Decisions sent to applicants	Late November/Early December 2008
Networks commence	January- April 2009
Meeting of representatives from funded networks	Late Spring/early Summer 2009

Proposals should have start dates between 1<sup>st</sup> January and 30<sup>th</sup> April 2009 and can be for a maximum of 12 months in duration. The ESRC currently has £1,125,000 (at 100% FEC) available to fund proposals under this initiative. In addition, BBSRC and MRC have agreed to provide additional funding to support collaborative work which crosses into their remits to enable medical, biological and social scientists to collaborate in innovative new ways through this Initiative. It is expected that approximately four to six proposals will be funded under this call.

Eligible costs include:

- PI costs for overseeing the network
- Researcher time for undertaking pilot/ proof of concept work
- Administrative support (e.g. for organising workshops)
- Costs associated with running pilot work and networking activities
- Travel and subsistence

Principal investigators and up to 2 other members of the network will be expected to attend a meeting of the networks in mid/ late 2009, probably in London. This event will cover progress to date, emerging key issues and exchange of best practise. Provision for travel and subsistence costs for this meeting should be made in the application.

### **Eligibility**

The call for proposals is open to all institutions and researchers normally eligible for ESRC, BBSRC and MRC managed calls, which includes those Research Organisations approved by the three councils (see <http://www.rcuk.ac.uk/research/eligibility.htm>); this website also contains links to relevant pages from ESRC, BBSRC and MRC, for further information on researcher eligibility).

### **Expressions of Interest (EOIs)**

If you are intending to submitting a proposal you are asked to first register your interests and contact details here to assist the Research councils in securing appropriate peer review expertise and establish fit to initiative and other funders interests. Please email your text and contact details to [behaviours@esrc.ac.uk](mailto:behaviours@esrc.ac.uk) by **4pm on 3<sup>rd</sup> September 2008**. This should include the following information:

- Lead Name
- Lead Institution
- Collaborators/co-investigators/proposed network membership
- Topic area and relationship to themes
- Summary of Proposed activities
- Does the topic include work relevant to other Research Councils. If so, which ones and how?

### **Submitting an Application**

All applications should be submitted to the ESRC through the Jes system and include a case for support of up to six pages, CVs of all applicants, a one page justification of resources, and nominated reviewers. For information on completing the application form, applicants should refer to the 'Notes for Guidance for Applicants' which has been issued in conjunction with this call and is available on the ESRC website.

### **Closing date**

All applications must be submitted by **4pm on 23 of September 2008**. See above for information on the submission of Expressions of Interest.

### **Assessment**

Proposals may be sent to one of the academic reviewers nominated by the applicant. Peer review will be finalised by an Expert Assessment Panel and applicants will be informed of the outcome by Early December 2008. The assessment criteria will take in to account the scope of

the UIB specification; proposals that do not fall in the remit of the call will be rejected in the office. Membership of the panel will be detailed on the UIB section of ESRC society today web site.

## Expansion of detail on Themes

When consulting on this topic, the ESRC held two workshops with a broad range of academic inputs, including academics from beyond the social science community. Eight research themes were identified as potentially important and fruitful areas for interdisciplinary work that warrant further intellectual attention. The sorts of questions that may be addressed within each theme are described in further detail below. These are not intended to be an exhaustive list:

- i) **Health Behaviours** – More research is needed on how we can bring about sustained positive behaviour change to support healthy living. Identifying causal pathways from genes, through brain to cognition and social adaptation lies at the heart of understanding how to address this question. How can we model health behaviours to account for intentional, unintentional and unpredictable outcomes? What makes people vulnerable to mental ill health and depression? How does our social environment interplay with our basic processes such as sleep? In turn, how does this interplay affect our behaviour and ability to function socially? How do environment and biology interact when it comes to eating – at what point do individuals override biological satiety signals and overeat thus contributing to obesity? Work is needed to integrate knowledge across the life and social sciences as well as linking together research on physical and mental health states.
- ii) **Financial and Economic Behaviour** - There is a clear long term need to study this topic across the life course and preferably longitudinally. Much of ESRC’s existing portfolio has a focus on the aggregate rather than the individual. Adolescence could be a key point of focus - Are patterns of consumption set at an early age? What do we know about financial behaviour amongst young people in relation to savings and pensions? What are the key questions that still need to be answered and how should they be addressed? In terms of biological processes why do people respond to financial incentives in different ways? A key insight from previous ESRC Cultures of Consumption programme is that much of the time we are not making choices, we are responding to structures and infrastructures in different ways. Bringing together existing strengths in both the social and natural sciences can bring new insights into “hot and cold” decision making at different stages of the life course.
- iii) **Learning, Education and Symbolic Systems**- Although it is known that intelligence is protective against some risk factors, individuals develop ‘buffers’ or skills in case things go wrong whether in terms of illness, injury or social and economic adversity but as yet this learning is far from fully understood. Furthermore, there is unexplored potential in the use of existing knowledge from the biological sciences e.g. genetics in the study of education. How does schools and pastoral work interact with different vulnerabilities in the individual? What makes people more or less vulnerable? How is knowledge imparted? How can we stimulate brain activity to keep being active longer? Can we understand more of how an adolescent brain approaches risk taking, with potential for beneficial intervention? Are there specific insights to be gained around arithmetic learning and the human use of symbols? There is renewed interest in all aspects of sign/symbol use (not just reading and mathematics) across cultures as well as the impact of technology in everyday life learning and communication. The UK research community is well placed to take forward work in this area in collaboration with potential users of that research.
- iv) **Sex Differences** –There is much knowledge of socially determined and biologically determined sex differences. However, there are limited attempts to bring this knowledge together to build on and draw meaningful conclusions. How might we link social science

knowledge on socially expressed differences with differences in genetic and environmental expression to gain new insights? Furthermore, how if at all does the environment and biology shapes girls' and boys' behaviours differently? What are the practical and methodological challenges to using and combining data in this area? Again, bringing together existing strengths in both the social and natural sciences could provide a better and more collective understanding of the social and biological influences on human behaviour.

- v) **Fertility and Reproductive Behaviour** - There is growing evidence that factors such as smoking, diet and exercise are implicated in changing patterns of fertility. In addition, technology has transformed reproductive behaviours over the past 50 years (e.g. contraception, late childbirth) not just in the UK and other economically rich countries, but all over the world in poor countries too. How have these behaviours been transformed by these new reproductive technologies and changing patterns of health-related behaviours? What are the dynamics of decision making in relation to fertility and reproductive behaviours at different lifecourse stages? Social studies of marriage and family dynamics often do not address fertility and pre-pregnancy health..
  
- vi) **Criminal and Antisocial Behaviour** - Antisocial behaviour changes over the life course and is worse at adolescent stages. But we are yet to really understand why. Though issues around social norms remain important, it is timely to looking at this by linking sociology and social policy work with basic and applied biological and medical science. How could existing work be fruitfully extended by adding a developmental focus to better understand the dynamics of the relationship between maladjustment, mental health, adversity and anti-social behaviour? How are perceptions of risk, fear of crime and threats associated with public places and how do they impact behaviour? Work has taken place looking at the genetic basis for violent behaviour, and important insights have been gained in environmental influences such as association with delinquent peer groups. Social science has for many years looked at the protective and exacerbating factors in relation to adverse life experiences. Now we have the chance to look at circumstances and experience, social, psychological and economic information, along with brain chemistry and function, genetics and epigenetics to gain a much more comprehensive understanding of relevant behaviours and their antecedents.
  
- vii) **Environment and Behaviour** – The Research Councils, including ESRC, fund a significant amount of research centred on sustainable development, climate change and energy. A recent focus has been to understand the apparent 'value-action gap', between individuals' awareness of environmental issues, and their willingness/capacities to change their behaviours. However, other aspects of the relationships between physical environments and the biological and social determinants of individual behaviour need to be addressed. For example, what impact on behaviour does extended contact with the natural world have at different stages in the life cycle-and why? What contribution does sensory contact with natural environments make to psychological, physical and social well-being? Other important issues include; understanding the differential effect place and the physical environment may have on an individual's internal environment and behaviour; the impacts of extreme weather events on individuals' perceptions of vulnerability, security and resilience; the extent to which 'adaptive environmental management' can promote wellbeing for economically rich and poor societies.

None of application areas are intended to duplicate existing and new investment through other mechanisms and initiatives. Rather they are aimed at complementing and extending such work into the study of individual behaviour.