

28-30 March 2007

EHBE CONFERENCE



By Sima Sandhu

All photos taken by Oliver Curry

The European Human Behaviour and Evolution (EHBE) Conferences were begun in 2006 by [Tom Dickins](#) (University of East London), in order to provide a much needed interdisciplinary European forum for discussing evolutionary research applied to the behavioural sciences, broadly interpreted. After the success of the first conference, held at the London School of Economics, the 2007 conference was designed to attract a much larger and more diverse audience and succeeded in drawing 130 delegates from 15 different countries, including the United States and New Zealand, as well as 13 European countries. This was a testament to the need for a European meeting of evolutionary behavioural scientists to exchange ideas and form collaborations. The 2007 conference was held again at the London School of Economics, organised by [Rebecca Sear](#) (London School of Economics), [Tom Dickins](#) and [David Lawson](#) (University College London), and was supported by the generosity of the Galton Institute and the British Academy. These conferences will continue to run annually, and next year will see the first continental EHBE conference, organised at Montpellier University in France by [Michel Raymond](#) and [Charlotte Faurie](#). All information about EHBE conferences past, present and future can be found at the following link: <http://www.ehbes.com>

EHBE 2007

The success of this conference was largely due to the genuinely interdisciplinary nature of the programme, ensuring that equal focus, consideration and discussion was given to the three main evolutionary perspectives in studying human behaviour; human behavioural ecology, evolutionary psychology and cultural evolution. In accordance with this, the three plenary sessions were given by three established academics working within one

of these three approaches to the study of human behaviour. Many of the papers were presented by researchers working in these three fields, but other disciplines were also represented including evolutionary archaeology, sociology and medicine. This commitment to providing a multidisciplinary forum for this meeting was reflected in the diverse subject backgrounds of the attending delegates. The programme also managed to incorporate presentations and posters from researchers at different stages in their academic careers, from post-graduate students to leading academics and professors in their field. To promote communication and interaction between the disciplines, the conference was serial, rather than parallel, and coffee breaks were long to encourage discussion.

A selection of papers from this conference will appear in a special issue of the *Journal of Cultural and Evolutionary Psychology*, together with an introductory article exploring the history and potential future of the application of evolutionary theory to human affairs by the conference organisers (Dickins, Lawson and Sear). Below, we provide a summary of the 31 thought-provoking papers presented at EHBE 2007. In addition to these oral presentations, 31 posters were presented.

Day 1: Human Behavioural Ecology

The first day of the conference focused on human behavioural ecology approaches to investigating various aspects of human behaviour. The plenary session was given by [Ruth Mace](#) (University College London) on the evolutionary puzzle of the demographic transition. Reflection was made on the current paradoxical decline in fertility in countries where wealth is abundant. Consideration was given to how an evolved psychology could have shaped a consistent trend towards a

reduction in family size, by applying the principles of optimisation to the study of cultural diversity in reproductive decline, and illustrated explicitly with examples from the Gambia, Ethiopia and Europe. Ruth drew heavily on parental investment theory, and argued that competition was the key driver to investment in offspring: as our offspring will ultimately compete with their peers, so we do the same. Ruth concluded by discussing where this decline in fertility would ultimately end.

The morning session consisted of research papers themed around mothering and maternal influences. Beginning with the subject of “helping at the nest”, [Alexander Pashos](#) (Free University, Berlin) presented research on a US population suggesting that maternal aunts had a particular role as caregivers for children, in particular the mother’s last born or younger sister, irrespective of her emotional closeness to the mother. Moving on to the unusually long post-reproductive life of human females, [Rufus Johnstone](#) (University of Cambridge) proposed an explanation for the evolution of menopause based on the female-biased dispersal of great apes, together with non-local mating. Local relatedness increases with female age in species with female-biased dispersal and/or non-local mating, supporting the evolution of late-life helping in long-lived social mammals. [Valerie Grant](#) (University of Auckland) then changed the subject to sex ratios, by presenting evidence supporting the possible influence of mammalian maternal follicular testosterone on the consequent sex of offspring (see e.g. [Grant 1998](#) for her previous work on sex ratio).

Following the plenary on fertility decline, the first of the afternoon sessions centred on life history theory and, in particular, our understanding of trade-offs in human reproductive strategies. Among the presentations was one of the first research studies to demonstrate a link between a development intervention and an increase in both birth rates and childhood malnutrition. [Mhairi Gibson](#) (University of Bristol) used demographic and anthropometric data from rural Ethiopia to explore the unintended consequences such labour saving devices can have on nutritional status and demographic rates, as energetic trade-offs shift: in this case, energy appeared to be diverted to high birth rates ([Gibson & Mace 2006](#)). In contrast, Ilona Nenko (Jagiellonian University, Krakow) presented data in this session from rural Poland, suggesting that such energetic trade-offs may not necessarily be found in well-nourished populations. She found that women may not always pay a high cost for high reproductive effort. In her population,

well-nourished women, with good nutritional status during development, could maintain a high number and weight of offspring, without showing deterioration in nutritional status during and after reproduction. The final paper in this session took a different tack at understanding reproductive behaviour by investigating the effects of perceived uncertainty. Based on longitudinal data from the US, [Jeffrey Davis](#) (California State University, Long Beach) showed that uncertainty about acquisition of resources was positively associated with fertility, while uncertainty about adult social status and quality of life for future generations were negatively associated with fertility.



The final afternoon session of the day concentrated on various aspects of group interaction and status. [Steven Platek](#) (University of Liverpool) discussed his recent findings which lend support to facial resemblance as a likely mechanism for kin recognition. The preliminary research presented indicated the impact of facial resemblance on decisions regarding sexual infidelity, and also used neuroimaging data to confirm that facial resemblance adjusts brain responses towards different groups of individuals. The benefits of applying evolutionary theory to understanding modern organisational behaviour also emerged in this session. Martin Fieder (University of Vienna) reported findings on the positive correlation between male reproductive success and status within an institutional hierarchy well known to conference delegates, that of a university ([Fieder et al. 2005](#)). There was no such positive correlation between the number of children women in this hierarchy had; if anything, women higher up the hierarchy had fewer children. This paper highlighted the significance of evolutionary predictions in the theoretical understanding of economic and administrative structures. Further analysis of hierarchies continued in this session with the discussion of the evolution of inequality by [Eric Alden Smith](#) (University of Washington), who used game theoretical and simulation models to develop an understanding of the processes by which socioeconomic inequality has come to emerge in egalitar-

ian societies ([Smith & Choi 2007](#)). Plausible scenarios were presented showing how relatively small asymmetries can lead to larger inequality based on resource control and knowledge.

Day 2: Evolutionary Psychology

The second day of the conference was devoted to evolutionary psychology. The plenary was given by [Daniel Nettle](#) (University of Newcastle), who effectively validated the case for the study of individual differences in evolutionary psychology. Heritable variation was discussed as ubiquitous, with abundant relevance to fitness in humans. Examples were given of the high heritability coefficients in intelligence, psychopathology and personality. Daniel focussed particularly on variations in handedness and empathy, with respect to their relationship with other traits and behaviours. He then suggested how these observations could generate hypotheses to explain observed variation based on trade-offs between differences in fitness costs and benefits.

The morning session centred on particular aspects of human cooperation and reciprocity. First, evidence highlighting human sensitivity to maintaining a good reputation was presented by [Melissa Bateson](#) (University of Newcastle). She used a naturalistic experiment on the significance of cues for being observed, in this case a picture of a pair of eyes, on the extent of cooperation ([Bateson, Nettle & Roberts 2006](#)). This research again demonstrated the applications of evolutionary theory outside the academic domain, as it has attracted considerable attention from potential users in both commercial and publicly funded bodies (e.g. manufacturers who use honesty boxes to sell their products; police keen to use such methods to cut crime). [Masanori Takezawa](#) (Tilburg University) changed the focus from empirical research to theoretical work, by presenting a mathematical model that attempted to challenge the [Boyd and Richardson \(1988\)](#) suggestion that reciprocity could not have evolved in sizeable groups. Tamás Bereczkei (University of Pécs) ended the session with evidence from Hungary which supports the hypothesis that generous

actions are a form of costly signalling of trustworthiness in modern industrial societies.

The relationship between physical and behavioural displays of attractiveness and preference was the emphasis of the middle session of the day. This session showcased new methods in studying physical attractiveness, beyond the static composite images which are usually used in attractiveness studies. With advances in motion-capture software, bodily and facial movements can now also be studied for associations with behavioural and psychological traits. [Will Brown](#) (Brunel University) presented a study in rural Jamaica which involved participants evaluating athletic ability, dance ability and attractiveness from facial photographs, including themselves, to provide a measure of self-deception (see [Brown et al. 2005](#) for a similar study on dance and asymmetry). The results indicated that male fluctuating

asymmetry has a positive association with inflated self-perception, and were used to discuss the hypothesis that self-deception plays a role in deceit. Female bodily attractiveness was then addressed by Boguslaw Pawlowski (University of Wroclaw), who is interested in condition-dependent mate preferences. Using Polish data, he showed that a woman's phenotype does indeed influence her preferences for particular characteristics in sexual partners. Ed Morrison (University of Bristol) continued the theme of movement and attractiveness, this time focussing on facial movement. He extended the ecological validity of attractiveness research by examining mobile, rather than static, faces. He found evidence that facial movements distinguish male from female faces, and also evidence for a positive association between feminine motions and attractiveness ([Morrison et al. 2007](#)).

The late afternoon session included papers addressing a diverse array of psychological phenomena from an evolutionary perspective. [Randy Nesse](#) (University of Michigan) promoted an evolutionary explanation for understanding mood disorders. His argument revolved around the gaps between available resources and aspirations, and



has the ultimate intention of developing knowledge of motivational structures (Nesse 2006). Mark Sergeant (Nottingham Trent University) applied an evolutionary approach to understanding the effects of sexual orientation on social dominance and forms of aggression. Finally, Anna Rotkirch (Family Federation of Finland) presented an exploratory investigation of the phenomenon of “baby fever” in Finland, suggesting it may be an evolved mechanism to test and persuade male partners to commit.



The day ended with a rousing keynote speech from Robin Dunbar on the social brain and multi-level societies, reflecting the substantial body of work on this subject produced throughout his career. Starting with a whistle-stop account of brain size in relation to mean group size among different species, focusing particularly on monogamous species and primates, network and grouping data were used to understand the hierarchical structure present in human groupings. Robin then discussed the social brain hypothesis, presenting evidence that primates form behaviourally different social bonds, involving two distant components. The first of these was described as an emotionally intense component, mediated, for example, by the release of endorphins during grooming. The second was described as a cognitive component, creating a psychopharmacological environment for building trust. By extending bonding to non-reproductive relationships a hierarchically embedded group structure is created, though this produces a potential ‘free-rider problem’, particularly in dispersed social systems. Social time in humans (i.e. the equivalent interaction to grooming and contact time) involves conversations, but language does not produce endorphins in the same way that grooming does. In our species, laughter, music, dance and religion instead provide the same experience as grooming. During interactions which involve singing, dancing and laughter, endorphins are released, triggering oxytocins to create a

sense of “euphoric love”. Then Robin moved on to theory of mind, and here raised the significance of fifth order intentionality, which he suggested might be necessary for religion. He concluded with a discussion of how inequality in groups could solve individual fitness problems. This wide-ranging keynote demonstrated neatly how the disparate strands of the evolutionary analysis of behaviour (e.g. evolutionary psychology, primatology, endocrinology) can be brought together to shed light on a particular problem in the field.

Day 3: Cultural Evolution

The final day of the conference brought cultural evolution to the forum: the investigation of human cultural development and transition using processes parallel to those underlying biological evolution. The plenary was given by Kevin Laland (University of St Andrews), exploring gene-culture interactions. The discussion was based on recent statistical analyses of genetic data, revealing numerous human genes showing signals of strong and recent selection, for example in response to malaria and dairy farming. The assertion was made that humans have undergone strong recent selection for many different phenotypes. Based largely on the observation that most of these selective events were likely to have occurred in the last 10,000-40,000 years, Kevin suggested that gene-culture interactions, directly or indirectly, shaped our genomic architecture. He then addressed various applications of gene-culture models. In particular, he focussed on handedness, a behavioural trait which was addressed in the previous plenary from an evolutionary psychological perspective. This model attempted to account for the lower frequencies of left handedness in certain societies, were it is associated with negative qualities, such as clumsiness, evil or dirtiness. The model of handedness incorporated both genetic and cultural processes, based on assumptions that handedness has two phenotypic states; that the probability of becoming either left or right handed is influenced by alleles for dexterity and chance at a single locus; and that culturally transmitted biases also affect handedness. Models for sexual selection with culturally transmitted preferences and cultural niche construction were also presented to exemplify gene-culture co-evolution.

The first session of papers of the day epitomized methods for studying the transmission of culture. Laura Fortunato (University College London) presented the first of these papers, on “Galton’s problem”. This problem has been addressed by evolutionary researchers by applying phyloge-

netic comparative methods to cross-cultural data, to control for historical relatedness. However, Laura discussed the limitations of this approach, and proposed the solution of a web-based interface for collation of cross-cultural databases that could then be analysed using phylogenetic methods (see the Ethnographic Database Project: <http://www.ucl.ac.uk/~ucsalfo/EDP/Welcome.html>). [Fiona Jordan](#) (University College London) presented an empirical analysis that used a Bayesian phylogenetic approach, to support the hypothesis that changes in post-marital residence systems would result in changes to descent, using a sample of 67 Austronesian societies in the Pacific. Her analysis suggested that changes in descent practices lag behind changes in residence patterns over a thousand year time period. The final paper in this session, by [Ben Jones](#) (University of Aberdeen), proposed social transmission of mate preference helps perpetuate sexual selection of male traits. Observing positive attention from other women increased female preference for a male face, but decreased male preference for that man. These findings suggest that social transmission of mate preferences may influence judgements of facial attractiveness ([Jones et al. 2007](#)).

Conformity bias and the extent of conformist transmission in cultural traits was the theme running through the first of the afternoon sessions. [Jami Tehrani](#) (University of Durham) began the session with a paper on the co-evolution of craft traditions and ethno-linguistic groups in rural Iran, using a cladistic analysis of 150 craft traits to explore the processes that generate cultural variation among populations. This approach concluded that patterns of cultural diversity may arise by branching processes of descent, but their relationship to ethno-linguistic differences are a reflection of more complex processes of inheritance, not just population history. [Peter Schauer](#) (University College London) then moved on to evolutionary archaeology and presented research on drift and selection in the evolution of Greek pottery motifs. A neutral model approach was applied to over 3,000 painted cups from 600 to 300 BC. The findings

suggested that drift (rather than selection) could explain the distribution of motifs in early and late periods, with a strong conformity bias in the middle period. This supports conformist transmission in selection in the middle period, and a trade-off between risk and invention during the periods where drift predominated. In the final presentation, however, [Kimmo Eriksson](#) (Mälardalen University, Sweden) cast doubt on the existence of a generalised conformity bias. He discussed the adaptive value of conformity bias in cumulative culture by reviewing mathematical models of frequency dependent transmission. His synthesis suggests that conformist bias is adaptive when cultural traits are already common, but otherwise other adaptive

processes are needed to explain how the dominant culture came about.

The final session of the conference brought together three quite diverse papers. [Michel Raymond](#) (Montpellier University) presented a stimulation model which incorporated cultural factors to explain the evolution of male homosexuality. His model suggested that where male primogeniture and female hypergyny are common, the cost of the two known biological determinants of homosexuality are probably reduced, therefore supporting their evolution. [Jeroen Smaers](#) (University of Cambridge) then presented a paper which provided support for the social brain hypothesis in a study of comparative socioecology of

primate brain component evolution. Findings supported an association between overall relative brain size and different periods of developmental timing, a different locomotion pattern and different behavioural traits. [Andy Wells](#) (London School of Economics) ended the session and the conference with a stimulating presentation exploring the interactions between evolved capacities in humans and the cultural resources developed since the invention of writing. In this particular treatise of the new framework of ecological functionalism, he discussed the successes and failures of human cultural development as being underpinned by an interplay between Darwinian and formal types of rationality (see also [Wells 2006](#)).



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- ★ Smith, E. A. and J.-K. Choi (2007). The evolution of inequality: game-theoretical and simulation models. In T. Kohler and S. van der Leeuw (eds.) *Modeling Socioecological Systems*. Santa Fe, SAR Press.
- ★ Wells, A. J. (2006). *Rethinking Cognitive Computation: Turing and the Science of the Mind*, Palgrave Macmillan.

Programme and full paper titles

Wednesday the 28th March

Morning Session

- 10:30 Mother's younger sister is best?: differential caregiving of aunts and uncles from an evolutionary perspective.
Alexander Pashos
- 11:00 Age-specific changes in relatedness and the evolution of the menopause.
Rufus Johnstone & Michael Cant
- 11:30 A maternal influence on sex determination in mammals.
Valerie Grant

Plenary

- 12:30 The Behavioural Ecology of Fertility Decline
Ruth Mace

Early Afternoon Session

- 14:30 From evolutionary life history to international development: the demographic impact of a labour saving technology in Southern Ethiopia.
Mhairi Gibson & Ruth Mace
- 15:00 Reproductive history and body size: do women pay any costs of reproduction?
Ilona Nenko & Grazyna Jasienska
- 15:30 A longitudinal study of the effects of uncertainty on reproductive behaviour.
Jeff Davis & Daniel Were

Late Afternoon Session

- 16:30 Do I know you? Facial resemblance and social interactions
Steven Platek
- 17:00 Status and reproduction in humans: evolutionary theory and organisational behaviour
Martin Fieder & Susanne Huber
- 17:30 The evolution of inequality: game-theoretical and simulation models.
Eric Alden Smith

Thursday the 29th March

Morning Session

- 09:30 Reputation, reputation, reputation: Cues of being watched enhance cooperation in a real-world setting.
Gilbert Roberts, Melissa Bateson & Daniel Nettle
- 10:00 Revisiting "the evolution of reciprocity in sizable groups".
Masanori Takezawa & Michael Price
- 10:30 Altruism toward strangers as a means of building reputation: a test of the costly signal model in a real life situation.
Tamás Bereczkei, Bela Birkas & Zsuzsanna Kerekes

Early Afternoon Session

- 11:30 Fluctuating asymmetry and self-deception.
Will Brown & Robert Trivers
- 12:00 Women's body attractiveness and preferences for sexual partner's characteristics.
Boguslaw Pawlowski & Grazyna Jasienska

12:30 Something in the way she moves: motion in human facial attractiveness.
Ed Morrison, Lisa Gralewski, Neill Campbell & Ian Penton-Voak

Plenary

14:00 Some Thin Films: Bringing Individual Differences into Evolutionary Psychology
Daniel Nettle

Late Afternoon Session

15:30 Using the motivational structure assessment to study mood.
Randy Nesse

16:00 Social dominance and sexual orientation.
Mark Sergeant & Tom Dickins

16:30 How do some women get “baby fever”? Emotional fertility incentives in contemporary Finland.
Anna Rotkirch

Keynote

17:30 Friends and Relations: the Social Brain and Multilevel Societies
Robin Dunbar

Friday the 30th March

Morning Session

09:30 Beyond the Ethnographic Atlas: cross-cultural data and the comparative analysis of human cultural practices.
Laura Fortunato

10:00 Changes in post-marital residence precede changes in descent systems in Austronesian societies.
Fiona Jordan & Ruth Mace

10:30 Social transmission of mate preferences influences judgements of facial attractiveness in humans.
Benedict Jones, Lisa DeBruine, Anthony Little, Robert Burriss & David Feinberg

Early Afternoon Session

11:30 The co-evolution of craft traditions and ethno-linguistic groups in rural Iran.
Jamshid Tehrani

12:00 Cultural evolution in the Age of Athens: drift and selection in Greek pottery motifs.
Peter Schauer

12:30 The adaptive value of a bias for conformity in cumulative culture.
Stefano Ghirlanda, Kimmo Eriksson & Magnus Enquist

Plenary

14:00 Exploring Gene-Culture Interactions: Insights from a Couple of Case Studies
Kevin Laland

Late Afternoon Session

15:30 Towards an explanation for male homosexuality in humans?
Michel Raymond

16:00 Comparative socioecology of primate brain component evolution.
Jeroen Smaers

16:30 Ecological functionalism: computation and evolutionary psychology.
Andy Wells

Poster titles

Posters are presented in alphabetical order of first author as follows:

1. **Should children conceal or reveal their paternal identity? A quantitative genetic model**
A. Alvergne, D. Caillaud & M. Raymond (Institute of Evolutionary Sciences, Montpellier)
2. **The ABCs of heroism: an evolutionary model**
H. Arrow (University of Oregon & London Business School) & M. Van Vugt (University of Kent)
3. **Is gossip a social bonding system? Testing the effect of gossip as pre-play communication in social dilemma games**
C.J.S. De Backer (University of Leeds), C.M. Larson & L. Cosmides (University of Santa Barbara)
4. **Random copying and steady turnover on pop charts**
R.A. Bentley (Durham University), C.P. Lipo (California State University), H.A. Herzog (Western Carolina University) & M.W. Hahn (Indiana University)
5. **Perception of, and attraction to, sociosexuality in the face**
L. Boothroyd (St Andrews & Durham), B.C. Jones (St Andrews & Aberdeen), M. Burt (St. Andrews & Durham) & D. Perrett (St. Andrews)
6. **What do people infer from physical attractiveness?**
G. Brewer, J. Archer & J. Manning (University of Central Lancashire)
7. **Attractive faces are not always average**
L.M. DeBruine, L. Unger, B.C. Jones (University of Aberdeen), A.C. Little (University of Stirling) & D.R. Feinberg (Harvard University)
8. **Assortative mating for personality in visual artists**
H. Clegg (University of Northampton), D. Nettle (University of Newcastle) & D. Miell (The Open University)
9. **Designing the first longitudinal study of grandparental investment in a contemporary western society**
D.A. Coall, R. Hertwig & M. Wänke (University of Basel)
10. **Salience of emotional displays of danger and contagion in faces is enhanced when progesterone is raised**
C.A. Conway, B.C. Jones, L.M. DeBruine L.L.M. Welling (University of Aberdeen), M. Law Smith, D.I. Perrett (University of St. Andrews), M.A. Sharp (University of Wolverhampton) & E.A.S Al-Dujaili (Queen Margaret University College)
11. **Explicit versus implicit serial learning**
D. Dickins & C. Anderson (University of Liverpool)
12. **I am what I am: the origins of grammar in self-modelling**
Martin Edwardes (University of East London)
13. **The material evidence for variation in hominin behaviour in middle Pleistocene Europe**
H. Fluck (University of Southampton)
14. **Contrast effects in female physical attractiveness**
H. George (Newcastle University), P.L. Cornelissen, M.J. Tovée, & M. Bateson (University of York)
15. **Sexual imprinting as an evolved mechanism underlying Freud's Oedipus complex**
P. Gyuris & T. Bereczkei (University of Pécs)
16. **Phylogenetic reconstruction of extinct cognitive architecture**
D. B.M. Haun & J. Call (Max Plank Institute for Evolutionary Anthropology)
17. **When the apple doesn't fall far from the tree: Parent-child resemblance and kin investment**
M. Heijkoop, J. Semon Dubas & M. A. G. van Aken (Utrecht University)
18. **Fear & fitness revisited**
L.E.O. Kennair (University of Science and Technology)
19. **Facial symmetry in sex offenders: do "good genes" predict forced copulation?**
A.L. Krill, S.M. Platek (University of Liverpool) & T.M. Lake (Drexel University)

20. **Facial appearance affects voting decisions**
A. Little, R. Burriss (University of Stirling, University of Liverpool), B. Jones (University of Aberdeen) & C. Roberts (University of Liverpool)
21. **Smiles when sharing**
M. Mehu (University of Liverpool), K. Grammer (University of Vienna) & R.I.M. Dunbar (University of Liverpool)
22. **Leadership as a solution to public goods free-rider problem**
R. O’Gorman & M. van Vugt (University of Kent)
23. **Adult theory of mind, cooperation, Machiavellianism: the effect of mindreading on social skills**
T. Paál & T. Bereczkei (University of Pécs)
24. **Do patterns of searching for edible fungi differ between Nahua men and women?**
L. Pacheco-Cobos (National University of Mexico), M. Rosetti (University of Sussex) & R. Hudson (National University of Mexico).
25. **Genetic relatedness and social dynamics between adult siblings**
T.V. Pollet & D. Nettle (Newcastle University)
26. **Statistical insights from search behaviour of humans**
M. Rosetti (Sussex University), L. Pacheco Cobos & R. Hudson (National University of Mexico)
27. **The development of face preferences during adolescence**
T.K. Saxton (University of Liverpool), L.M. DeBruine, B.C. Jones (University of Aberdeen), A.C. Little (University of Stirling) & S.C. Roberts (University of Stirling)
28. **Own attractiveness affects strategies in an economic game**
F.G. Smith, L.M. DeBruine, B.C. Jones, (University of Aberdeen), D.B. Krupp (McMaster University), C.A. Conway & L.L.M. Welling (University of Aberdeen)
29. **IQ and economic development: what explains what?**
P. Töttö (University of Kuopio) & H. Rita (University of Helsinki)
30. **Perceived vulnerability to disease predicts variation in preferences for apparent health in faces**
L.L.M Welling, C.A. Conway, L.M. DeBruine & B.C. Jones (University of Aberdeen)
31. **Are you in your right mind?**
H. Woolley, O. Wood, A. Shortland, N. Tierney, K. Wathne & S. Platek (University of Liverpool)