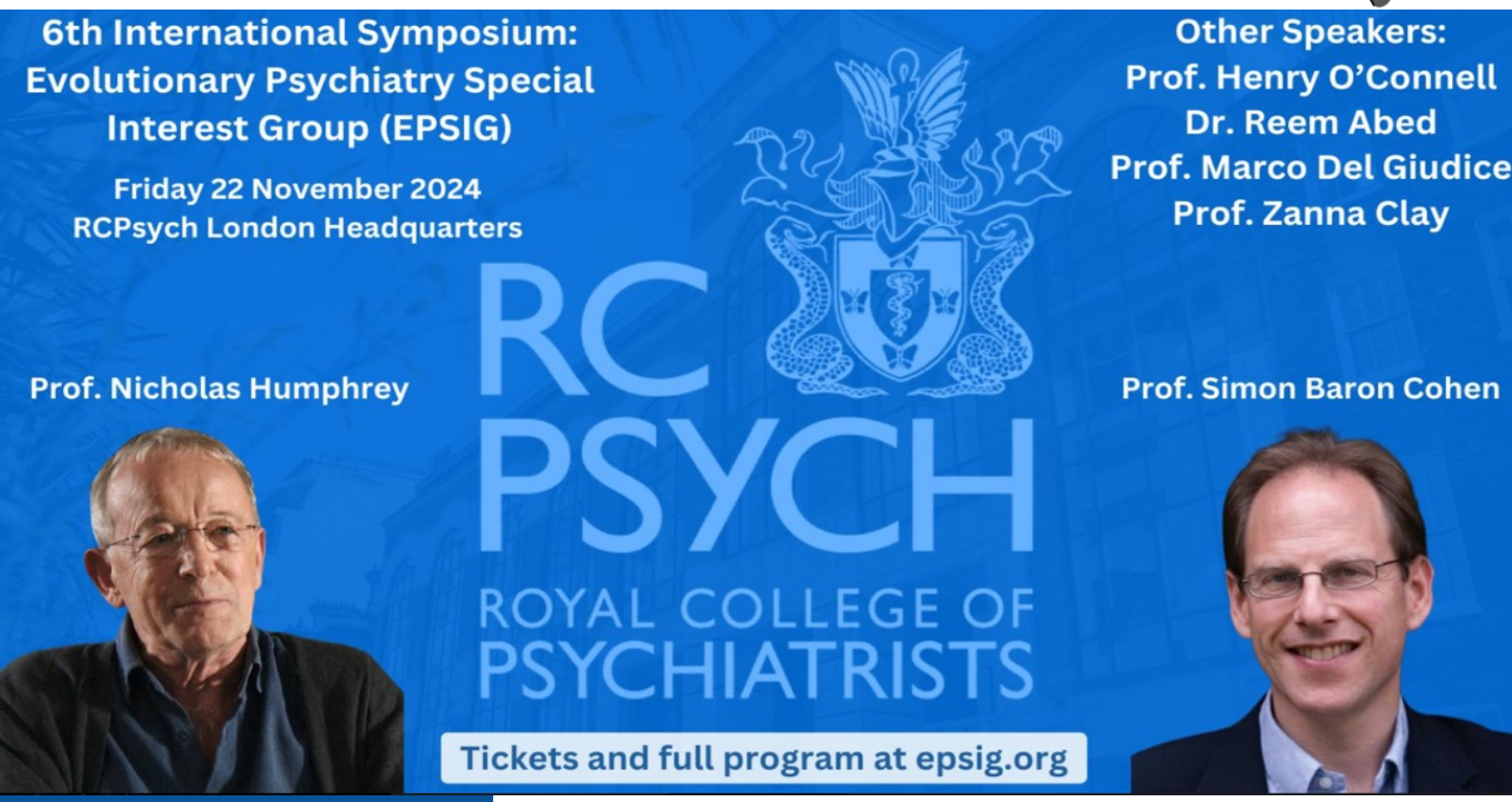
Evolutionary Psychiatry Special Interest Group (EPSIG)



Contacts

EDITOR: Dr Paul St John-Smith
(Consultant Psychiatrist)
paulstjohnsmith@hotmail.com

ASSISTANT EDITORS:
Dr Costa Savva, Core Trainee
Dr Sirous Golchinheydari, Core Trainee

EPSIG CHAIR: Dr Riadh Abed
(Consultant Psychiatrist)
abedrt@btinternet.com

FINANCE OFFICER: Dr Annie Swanepoel
(Consultant CAMHS Psychiatrist)
annie,panzer@gmail.com

EPSIG Website: www.epsig.org

EPSIG Youtube Channel:
www.youtube.com/@EPSIGUK/videos

Notes from the Editor

Hello again. Now the summer holidays are over we come to the new academic year. The team are looking forward to reading the Charles Darwin (EPSIG) essay prize entries. Some of us are going to Erice on October 19-23, 2024. If you haven't been to the conference centre there, you are missing one of the best venues ever! This forthcoming conference is on ethology and mental health, an important aspect for evolution and psychiatry as it is behaviour that is a major determining factor in evolutionary psychiatry. Ethology for our purposes is a branch of knowledge dealing with human character and with its formation and evolution as well as the scientific and objective study of animal behaviour. It is our aim to examine the contention that self-reported symptoms alone, are insufficient for accurate characterisation of some mental disorders.

We have a special article in this newsletter written by me and Riadh Abed, looking at some of the misconceptions and misunderstandings surrounding evolution and psychiatry. Some are about evolution per se and others around the intersection of psychiatry and evolutionary theory. I am sure there are many more so if anyone has any particular examples and wants to explore them, please write to us with your exposition. For instance, we have not covered issues around group selection. That is a contentious area worthy of an article sometime.

Upcoming Evolutionary and EPSIG meetings

FREE WPA EP Section web pages with links to all future webinars

https://www.wpanet.org/evolutionary-psychiatry

Registration is free of charge by clicking on the hyperlinks. All interested colleagues from all disciplines are welcome.

Erice 2024: "Beyond Words: Ethology of non-verbal interactions in therapeutic setting and psychiatric disorder", Erice (Sicily, Italy), 19-23 October 2024

There is also a meeting in the fabulous village of Erice in Sicily. It is a most beautiful location and, from past experience, a wonderful setting. It is about ethology and mental health. See link below.

https://centromajorana.it/nonverbalint2024/.

The Royal Society of Medicine Evolutionary Psychiatry Conference. RSM, London, 9 June 2025

The 6th International EPSIG Symposium in London

Friday 22 November 2024 – 6th International EPSIG Symposium.

See timetable on the next page. The event information and booking link will be listed on the College's events page, on the link below:

https://www.rcpsych.ac.uk/events/conferences/detail/2024/11/22/default-calendar/6th-international-symposium--evolutionary-psychiatry-special-interest-group-(epsig)

The 6th International EPSIG Symposium in London

Date: Friday 22 November 2024
Venue: In-Person at the RCPsych London Headquarters

Time	Session
9:00am	**Registration**
9:30am	**Welcome and introduction** Dr Riadh Abed, EPSIG Chair
	Plenary 1
9:35am	**Chair: Professor George Ikkos**
	Mental health and the environment – evolutionary perspectives Professor Henry O'Connell, University of Limerick
10:20am	**Engaging medical students in evolutionary psychiatry** Dr Reem Abed, University of Sheffield
11:05am	**Questions from the audience**
11:25am	**Refreshment break**
	Plenary 2
11:55am	**Chair: Dr Annie Swanepoel**
	The challenges and opportunities for evolutionary psychiatry in the genomics era Professor Marco Del Giudice, University of Trieste
12:40pm	**Questions from the audience**
12:50pm	**Essay Prize winner presentation**
1:00pm	**Lunch**
	Plenary 3
2:00pm	**Chair: Dr Elena Titova-Chaudhry**
	Essay Prize winner presentation
2:10pm	**The evolution and development of empathy: Comparative and cross-cultural insights from great apes and human infants** Professor Zanna Clay, Professor of Primatology, University of Durham
2:55pm	**Questions from the audience**
3:05pm	**Refreshment break**
	Plenary 4
3:35pm	**Chair: Dr Riadh Abed and Dr Paul St John-Smith**
	Sentience and Selfhood Professor Nicholas Humphrey, Cambridge
4:20pm	**Questions from the audience**
4:30pm	**The Prenatal Sex Steroid Theory of Autism** Professor Sir Simon Baron-Cohen, University of Cambridge
5:15pm	**Questions from the audience**
5:25pm	**Closing comments** Dr Riadh Abed, EPSIG Chair
5:35pm	**End of Conference**

ISEMPH 2024 Evolutionary Psychiatry Pre-Meeting Report

Evolutionary Psychiatry Pre-meeting, August 5-6, 2024 in Durham.

Many of us from EPSIG went to the pre-meeting in Durham on Evolutionary Psychiatry primarily run by Randolph Nesse with assistance from a host of other luminaries. It ran between August 5-6, from late morning Monday until Tuesday noon immediately preceding ISEMPH 2024. Tom Carpenter has some reflections on this marvellous networking event that we hope will inspire fellow psychiatrists and others interested in mental health to consider evolutionary aspects of psychiatry.

Paul St John-Smith, *Newsletter Editor*

ISEMPH 2024 Evolutionary Psychiatry Pre-Meeting Report

Dr Tom Carpenter
CT3 Doctor
Trainee Member of the EPSIG Executive Committee

"I think this is the best evolutionary meeting I have ever been to!" roared a participant over the hubbub at coffee time. I was just glad to be there alive. It shouldn't have felt like near-death experience to get from Glasgow to Durham late on a summer evening, even in a car with the ride characteristics of an antisocial lawnmower, but a storm had blown in and made the whole thing an utter ordeal. With a much-needed coffee in hand, I spoke to another participant - what had brought him to the meeting? "Well, it was close-by", he said. I nursed my trauma quietly. It did seem like it was going to be a good meeting though. I had limited experience of evolutionary psychiatry conferences, but I felt that there was a level of intensity and engagement present that could justify the 'best meeting ever' review.

Riadh Abed and Paul St John-Smith had opened, and explained the meeting had been suggested by Randolph Nesse, founding father, and Paul's introductory talk went on to outline how evolution can address some problems with mainstream psychiatry.

Daniel Nettle - armed with a quotation from "[his] wife's crazy uncle" and a knack for pithy explanation, framed depression as a 'socioecological disorder' where cognitive, metabolic and inflammatory mechanisms all have a role. Evolutionary psychiatry is a 'big tent', he said, with room for different explanatory models to coexist, and quoting Henry Bateson, the unit of analysis is "the flexible organism in its environment". I felt that these two simply-expressed ideas can do a lot of heavy lifting when thinking about evolution and mental health.

Annie Swanepoel and Nikhil Chaudhary's presentation on "what can we learn from hunter-gatherers?" had the show stolen by Baby Etemi, a year-old hunter-gatherer child who demonstrated on video, to the sweat and awe of the audience, her next-level machete skills. The stark difference that they highlighted between the levels of support in child-rearing for hunter-gatherers, compared to people in WEIRD (Western, Educated, Industrialised, Rich and Democratic) societies, was simply shocking and really helped to put perinatal mental disorder into perspective. Fittingly, there was a real infant in the audience (in a blow to my pride, I found out that he had been to more international conferences than I had!)

ISEMPH 2024 Evolutionary Psychiatry Pre-Meeting Report

Laif Kinnear was unafraid of voicing possibly unpopular opinions in his talk on the evolutionary perspective on depression, arguing that there is a need for caution in proposing adaptive functions for symptoms and calling for more evidence on functional benefits, and highlighting his own work showing that rumination is unlikely to be adaptive and targeting it through therapy can be beneficial. I felt it was important to have this constructively critical perspective at the meeting.

Henry O'Connell in his talk on clinical applications of evolution and psychiatry described how he felt that, as a clinician, he had been granted a 'superpower' by having an evolutionary perspective. I was inclined to agree - I've felt during my training that some things you learn allow you to access a new mode, a new gear (for example, when you can access more of the relational dimension of your patient contacts) and the evolutionary perspective is no different.

Marsden Maguire - whose route into evolutionary thinking had real personal meaning, through discovering his father's archives - finished the day, leading a discussion on clinical applications.

It felt like trainees and junior researchers were welcome and valued. One junior medic made a wonderfully-received contribution about the importance of shared social activity, relating an account from when he started a patients' football club at a forensic unit. There was a comment from another participant "I can't believe at this meeting, with all these speakers, and the best moment comes from you talking about a football club!"

There were one or two more intense exchanges of opinion in the discussions, including two participants entering into a contest around "whose effect size is bigger?" (this behaviour would later be considered in an evolutionary framework by other participants, and good humour was maintained)

There was conversation, drinks and dinner at a restaurant in Durham with terraces that crept down to the river. The food was excellent, and considering it was included in the price for the meeting (£92 for a trainee!) was astonishing value.

There was half a day remaining. The next morning, Robin Dunbar gave an evolutionary account of social relationships and ways in which the 'problem' of increasing group sizes is solved by different species, relating this to human evolution and human culture. Randolph Nesse, founding father, gave the penultimate talk, highlighting the importance of social selection as a force that results in humans changing their behaviours to access valuable social and sexual relationships. Riadh Abed concluded the talks with an explanation of the 'evobiospsychosocial model', and how functions become clearer when you think about how one level of explanation transitions to another.

To finish, a number of victims from among the participants (chosen in advance by Randolph Nesse) stood up and outlined what they thought were the biggest questions and challenges for the field, and then led breakout groups to discuss these, and reported back at the end.

And to finish, there was a hot lunch! I never get a hot lunch! The sun was beating down as I walked along a buddleia-lined cycle path to my car to begin the hopefully less arduous drive back to Glasgow, and I felt energised. There was a lot of exciting work to be done!

Special Article: Common Misconceptions about Evolution and Psychiatry

Unfortunately, there are a number of misconceptions about evolution and psychiatry (EP). Whereas we cannot cover all the public's misconceptions about psychiatry itself in a brief article, we can mention some of the problems at the intersection. Evolutionary psychiatry applies the principles of evolutionary biology to understand the origins and persistence of mental health disorders. Here are some common misconceptions about the intersection of evolution and psychiatry:

1. Evolutionary Psychiatry is a branch of psychiatry in opposition to conventional models:

This is wrong from the "get-go" as EP is partly a perspective and accepts the mainstream scientific thought and clinical practice. It illuminates research and practice and does not seek to replace mainstream psychiatry. It is not an ideology or a separate method of clinical practice.

2. **Evolutionary psychiatry ignores environmental factors**:

One misconception is that EP attributes all mental health disorders solely to evolutionary history, neglecting the influence of environmental factors such as trauma, development, socioeconomic status, and cultural norms. In reality, evolutionary psychiatry acknowledges the complex interplay between evolutionary factors and environmental influences in shaping mental health.

3. Evolutionary explanations are deterministic:

Some may mistakenly believe that EP proposes deterministic explanations for mental health disorders, implying that individuals are predetermined to develop certain conditions due to their evolutionary history. However, EP emphasizes that genetic predispositions interact with environmental factors often in a myriad of unpredictable ways, leading to a range of possible outcomes for mental health.

4. Evolutionary psychiatry pathologizes natural behaviours:

There's a misconception that EP automatically pathologizes behaviours that were adaptive in ancestral environments but may be maladaptive in modern society (Mismatch). For example, traits like anxiety substance use, or aggression may have had adaptive value in certain contexts but can contribute to mental health disorders in contemporary settings. However, EP aims to understand the evolutionary origins of behaviours without necessarily pathologizing them, recognizing that they may vary in their adaptiveness depending on the context. We also try to avoid simplistically asserting automatically that psychiatric disorders are adaptations or that adaptations are disorders. These errors of attribution and thinking are common and are a hinderance to the field being taken seriously. For instance, moods have adaptive value, but severe mania or psychotic depression are not adaptive. Likewise thinking is adaptive but thought disorder is not. The real issues in evolution and psychiatry and what constitutes illness, disease and disorder are much more complex and deserve more nuanced conceptualisation. The examination of these complex issues is part of our aims.

5. Evolutionary psychiatry is reductionist:

Another misconception is that EP oversimplifies mental health disorders by reducing them to evolutionary explanations, neglecting the complexity of psychological, social, and biological factors involved. In reality, evolutionary psychiatry seeks to integrate evolutionary insights with other perspectives, such as neuroscience, psychology, anthropology, epidemiology, genetics, and sociology, to provide a comprehensive understanding of mental health. In reality, mainstream biological psychiatry with its focus on molecular and neurotransmitter events is excessively reductionistic and EP with its broader concept of the biological can help overcome this reductionism.

Special Article: Common Misconceptions about Evolution and Psychiatry

6. Evolutionary psychiatry suggests that mental health disorders are universal:

While EP emphasizes the universality of certain evolved psychological mechanisms, such as fear or social bonding, it does not imply that mental health disorders are universally expressed or experienced in the same way across all cultures. Cultural and contextual factors play a significant role in shaping the manifestation and interpretation of mental health disorders, and EP takes these factors into account in its analyses.

By addressing these misconceptions, EP can contribute valuable insights to our understanding of mental health disorders, emphasizing the importance of considering both evolutionary and environmental influences in shaping human psychology and behaviour.

In more general evolutionary terms, Darwinian evolution, despite its widespread acceptance in the scientific community, is often misunderstood or misrepresented in popular discourse. Here are some common general misconceptions:

7. Evolution is just a theory:

In scientific terms, a theory is a well-substantiated explanation of some aspect of the natural world that is based on a body of evidence. Evolution, including Darwinian evolution, is supported by an overwhelming amount of evidence from multiple fields such as palaeontology, genetics, comparative anatomy, and molecular biology. It's not just a guess or a hypothesis.

8. Evolution is entirely random:

While mutation, one of the driving forces of evolution, is mainly random, natural selection is not. Natural selection acts on the variation generated by mutation, favouring traits that enhance an organism's survival and reproduction in a given environment. Evolution is the result of the non-random process of natural selection acting on random genetic variation.

9. Evolution is linear:

Evolution does not always proceed in a linear fashion from simple to complex. It's a branching process, with species diversifying and adapting to various ecological niches over time. The evolutionary tree of life resembles a complex web of interconnected branches rather than a straight line.

10. Individuals evolve:

Evolution occurs at the population level, not the individual level. While individuals within a population may possess certain traits that provide advantages in survival and reproduction, it's the frequency of these traits in the population that changes over time due to natural selection, genetic drift, gene flow, and mutation. Individuals may adapt or develop but the ability to do that may be what has evolved and may be what has been selected.

11. Evolutionary progress:

Evolution does not have a predetermined goal or endpoint. It's not about becoming "better" or more advanced; it's about adaptation to changing environments. Organisms evolve traits that increase their fitness within their specific ecological context, but these traits may not necessarily make them "better" in an absolute or permanent sense. Teleology, the idea that natural processes are directed toward specific goals or purposes, is considered inappropriate in the context of evolution for several reasons:

A. Lack of evidence for purpose or intent: Evolutionary processes, such as natural selection, operate without foresight or intentionality. Traits that increase an organism's fitness are favoured by natural selection because they confer reproductive advantages in specific environments, not because they are striving toward a predetermined goal. There is no evidence to suggest that evolution is guided by a teleological force or purpose. Evolution is charact-

Special Article: Common Misconceptions about Evolution and Psychiatry

erized by variability and contingency rather than a predetermined direction or purpose. Evolution is characterized by variability and contingency rather than a predetermined direction or purpose. The outcomes of evolution are influenced by a myriad of factors, including genetic variation, environmental changes, chance events, and historical constraints. As a result, evolution does not follow a linear path toward a specific endpoint but instead leads to diverse and often unpredictable outcomes.

B. Evolution is not progressive: Teleological thinking often implies a notion of progress or advancement, with organisms evolving toward greater complexity or perfection. However, evolution does not necessarily lead to more complex or "better" organisms. Adaptations that enhance an organism's fitness are favoured by natural selection, but what constitutes "fitness" depends on the specific environmental conditions and ecological interactions. Evolutionary change does not inherently imply progress or improvement.

C. Incompatibility with scientific methodology:
Teleological explanations rely on attributing purpose or intention to natural phenomena, which falls outside the realm of empirical science. Science seeks to explain natural phenomena based on observable evidence and testable hypotheses, without invoking supernatural or teleological explanations. Teleology lacks predictive power and explanatory value within the framework of scientific inquiry.

In summary, teleology is considered inappropriate in the context of evolution because it does not align with the evidence-based principles of evolutionary biology. Evolutionary processes are driven by mechanisms such as natural and other forms of selection, genetic drift, and mutation, which operate without independent foresight or intentionality and lead to diverse and contingent outcomes shaped by environmental factors and chance events. Genetic engineering by humans may change this slightly but the organisms will still be subject to selection processes and unexpected outcomes will still arise.

12. Evolution violates the second law of thermodynamics:

Some argue that evolution violates the second law of thermodynamics, which states that entropy (disorder) tends to increase over time in a closed system. However, the Earth is not a closed system; it receives energy from the sun, which powers biological processes and allows for the increase in complexity seen in living organisms over time.

13. Humans are not evolving. Or, you cannot apply evolutionary ideas to humans.

Wrong! humans are still evolving. Evolution is an ongoing process, and all living species, including humans, continue to adapt to their changing environments through natural selection, genetic drift, gene flow, and mutation. In any environment, there will be differences in survival and reproductive success associated with different heritable traits. Also, unexpected changes in environmental conditions (epidemics, climate change, technological innovations etc.) can favour some individuals over others, leading to changes of gene frequencies over generations. While the pace of human evolution may be different in type to other organisms due to factors like cultural practices, technological advancements, and medical interventions, there is evidence to suggest that human populations are still undergoing genetic changes.

For example, studies have identified genetic adaptations in human populations in response to selective pressures such as disease resistance, diet, climate, and altitude. Additionally, factors such as migration, interbreeding between populations, and changes in lifestyle can influence the genetic

Special Article: Common Misconceptions about Evolution and Psychiatry

makeup of human populations over time. A disease epidemic might selectively kill people with certain genes but not others, leading to a change in frequency of such genes. This could happen rapidly. That would be evolution in action. However, as medical doctors we try to oppose any such Natural Selection by trying to treat people or even prevent such events.

Recent advances in genetics and genomics have provided insights into ongoing evolutionary processes in humans. These studies have revealed genetic variations associated with traits like lactose tolerance, resistance to certain infectious diseases, and adaptations to high-altitude environments, among others. In summary, while the pace and nature of human evolution may differ from that of other species, humans are indeed still subject to evolutionary forces and continue to undergo genetic changes over time.

Evolutionary thinking can be and has been applied to human behaviour and thought, giving rise to fields such as evolutionary psychology and evolutionary anthropology. These disciplines seek to understand human behaviour and cognition through the lens of evolutionary theory, exploring how natural selection has shaped the psychological and social traits of humans over time. Overall, evolutionary thinking provides a valuable framework for understanding the complex interplay between biology, culture, and environment in shaping human behaviour and thought. While not without controversy and debate, evolutionary approaches have contributed significantly to our understanding of what it means to be human.

Understanding these misconceptions can help foster a more accurate understanding of Darwinian evolution and its role in humans. Unfortunately, many people have persistent misconceptions about evolution and especially with its intersection with psychiatry. Some are simple misunderstandings, ideas that develop in the course of learning about evolution, possibly from school experiences and/or the media. Other misconceptions may stem from purposeful attempts to misrepresent evolution and or psychiatry and undermine the public's understanding of this topic or wilful ignorance because of some predetermined political, commercial, or ideological stance. At EPSIG we hope we can dispel some of these misconceptions for those with an open mind who wish to be more curious about evolution and its relation to mental health and human behaviour.

Paul St John-Smith
Newsletter Editor

Riadh Abed
EPSIG Chair