

Session II: The brain: social, cultural and philosophical perspectives

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The human brain has evolved an extraordinarily efficient information storage and processing capacity, arguably in response to the increasing social complexity of human life but is also subject to more immediate environmental influences that are social, cultural and technological in character. In this session, we consider what we know of these influences and their individual and societal impacts and what this means for human capability.

Introduction

In this session we broaden our perspective on the human brain, seeking to understand brain, mind and wellbeing in their social, cultural and environmental contexts. The evolution of the human brain has often been linked to the increasing social complexity of human life, and a number of studies have made intriguing linkages between our complex sociocultural world and characteristics of the human brain. For example, it is well known that specialised brain networks support some very human capabilities such as recognising human faces, learning human languages, visually analysing the physical environment, and imitating the behaviour of others.

As a social scientist interested in the role of the social environment in shaping opportunities and constraints for human action, I find some of the connections that have been made between features of the brain and characteristics of an individual's social network especially interesting. For example, the size of an individual's social network has been found to be related to the volume of their amygdalae (e.g., Bikart et al., 2011). White matter connectivity in brain regions supporting social and affective processing has also been related to characteristics of an

individual's position in their interpersonal social network, including the centrality of their role in the network and their potential capacity to broker connections among disconnected others (Hyon et al., 2022). If replicated, studies such as these provide an avenue for investigating how our brains shape and are shaped by the real-world social networks we inhabit.

The recent pandemic provided a shock to our everyday sociocultural and environmental contexts in most parts of the world, limiting movement and interpersonal interaction, as well as access to economic opportunities. Some ongoing studies took advantage of this natural experiment to explore the impacts of this sudden change on brain, mind and wellbeing. In a study in Israel, for example, Salomon et al. (2021) documented temporary volumetric changes during lockdown in the amygdala and other nearby brain areas. In another natural experiment, conducted as part of the long-running Mannheim Study of Children at Risk, whose participants are now in their early 30s, Monninger and colleagues used momentary assessments of mood across the course of a week to record a mood-lifting impact of positive real-life social interactions, with the size of the relationship

dependent on the level of amygdala activity measured pre-pandemic. Interestingly, but perhaps not surprisingly, no corresponding effect on mood was found for online social interactions (Monninger et al., 2023).

These kinds of results link phenomena at vastly different scales, and raise many more questions than they answer, including the nature of explanation itself when it comes to linking processes in one complex system (i.e., the brain) with those in another (namely, the complex sociocultural world we inhabit).

To delve more deeply into the interplay between brain, mind and wellbeing and its sociocultural and environmental context, we have a wonderfully diverse panel who will offer, in turn, psychiatric, economic, urban planning, linguistic and philosophical perspectives. Settle in!

Our first speaker is Professor **Andrew Chanen**, Chief of Clinical Practice at Orygen and an expert on prevention and early intervention for severe mental disorders, especially personality disorders.

Next up, we will have a short video presentation from the Honourable Dr **Andrew Leigh**, member for Fenner and Assistant Minister for Competition, Charities, Treasury and Employment, and a former professor of economics at ANU.

Our third speaker is Dr **Jennifer Kent**, a DECRA Fellow and urbanism expert from the University of Sydney, who works at the intersection of urban planning, transport and health.

The fourth speaker is Professor **Jakelin Troy**, Director of Aboriginal and Torres Strait Islander Research at the University of Sydney, and an expert on the documentation and revival of Indigenous languages.

The final speaker is Professor **David Braddon-Mitchell**, also of the University of Sydney, and a philosopher with expertise in the philosophy of mind and cognitive science, including consciousness.

Each of our panellists will take about 12 minutes, and this will hopefully leave plenty of time for comments and questions from the audience.

References

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