Social Neuroscience and Neuroimaging: Perspectives and Open Questions

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With the advent of sophisticated new tools and techniques over the past decades, neuroimaging has contributed to substantial progress in the rapidly developing field of Social Neuroscience. Most previous work had been restricted to localization of isolated brain areas involved in social cognition. Recent work is beginning to focus on interactions between brain regions making up the social brain. Given this new focus, it appears timely and important to reflect and discuss open questions and current limitations in the investigation of the social brain. Major topics include: (i) Redefining the concept of functional brain network in both theoretical and experimental (operational) spheres; (ii) Studying neuronal communication across the entire social brain in healthy individuals and in individuals with aberrant social cognition; (iii) Combining advanced multimodal brain imaging tools to reveal neural communication in real time (MEG, EEG) and in high spatial resolution (standard and high-field fMRI); and (iv) Accounting for the relationship between behavior and brain activity. This symposium intends to provide a forum to stimulate discussion of these and other issues (such as complexity of social processes in realistic environments). Novel multimodal evidence from standard and ultra-high field fMRI, MEG, DTI, EEG, will be presented. Clinical implications will be highlighted, particularly with respect to sex differences in the social brain. In a nutshell, the symposium aims at providing up-to-date knowledge on the social brain. Learning outcomes include better understanding of the typically developing social brain and aberrant social cognition in a range of neurodevelopmental and neuropsychiatric disorders. Each presenter brings long-standing unique and complementary expertise to the table, making the sum greater than the parts. All presenters are also Editors for Social Neuroscience sections of such journals as NeuroImage, Plos One, and Frontiers in Emotion Science.

Social neuroscience: brain networks, sex differences and neural disorders
Marina Pavlova, Biomedical Magnetic Resonance, University of Tübingen, Germany

Social neuroscience in the wild. New approaches to understanding bodily communication in the dorsal stream
Beatrice de Gelder, University of Maastricht, Maastricht, Netherlands

Two putative modes of social information processing in the human brain
Aina Puce, Psychological and Brain Sciences, Indiana University, Bloomington, IN, United States

Brain networks for emotion and cognition: Implications for social neuroscience
Luiz Pessoa, Maryland Neuroimaging Center, University of Maryland, College Park, MD, United States