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Socioaffective Neuroscience & Psychology (SNP)

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COACTION PUBLISHING

Socioaffective Neuroscience & Psychology (SNP)

It is an exciting challenge for us to launch a new interdisciplinary journal, *Socioaffective Neuroscience & Psychology.* We believe the journal will appeal to a wide audience across several scientific specialties. In recent decades, considerable technical and theoretical advances have shed new light on psychological and neural processes. For example, in the area of neuroimaging techniques, it is now possible to explore the role of the brain in a wide variety of behaviours and paradigms (motor, perceptive, or cognitive). In the context of these new techniques, two important fields within cognitive neuroscience and psychology have started to emerge: (1) affective neurosciences that aim to explore the role of the brain in emotional and motivational information processing (Pankseep, 2003), and (2) social neurosciences that focus primarily on the role of the brain in social information processing (Insel & Fernald, 2004).

Recently an interesting convergence of affective and socioaffective neuroscience has been observed when considering a clear relational component involved in emotion. It is argued that emotions could be studied as representations taking place at the individual level involving a 'self' and an 'other' dimension (Bowlby, 1982; Mikulincer & Shaver, 2001). At the same time, by focusing neuroscience studies on these socioaffective psychological and neural processes, researchers are shedding light on correspondences between psychological and neural processes involved in action production and action perception by another person. A famous example of this correspondence is the identification of a group of neurons in the premotor cortex, which increase their firing rate during the realisation of certain actions and during the observation of the same actions performed by a congener (Rizzolatti, Fadiga, Gallese, & Fogassi, 1996). Such correspondence between processes is now spreading to the emotional domain, leading, for example, to studies on the cerebral processes involved in empathy and in the elaboration of 'Perception-Action models' to explain and predict empathy processes and disorders (Preston & de Waal, 2002). This implies physiological synchronicity between the observer and the actor when one feels the same emotion as that which is observed in another person (Levenson & Ruef, 1992). For example, the neural circuits involved in nociception are activated by actual pain as well as by the representation of the affective state of another person suffering pain (Morrison, Lloyd, di Pellegrino, & Roberts, 2004; Singer et al., 2004). Importantly, these results suggest that neural circuits involved in the processing of emotional information participate in the intersubjectivity of interacting people. However, the spatial recovery is obviously far from perfect, leading to some dissociation between cerebral regions involved in the 'self' and 'other' perceptions, allowing the brain to avoid the confusion between 'self' and 'other' and the expression of maladaptive empathy (Batson et al., 1997). Therefore, some brain areas play an important role in the distinction between representations linked to the 'self' and other representations linked to 'other'. To us, a very important point is that relationships between individuals first obey an inter-attraction motivational component that can be either positive or negative. One of the main ideas that motivated the creation of *Socioaffective Neuroscience & Psychology* is that in neuroscience or in the social sciences, this inter-attraction component can be studied through different functional contexts, such as *interindividual recognition, attachment and affiliation relationships, or sexual behaviour.*

Socioaffective Neuroscience & Psychology aims to publish studies from a wide spectrum of scientific fields – from the social sciences to animal neurosciences – to allow us to deepen our knowledge of psychological and neural processes involved in interactions with the environment and congeners. Studies dealing with the plasticity taking place within biological processes and their psychological correlates over time – particularly relatively short periods or longer plasticity processes that can last a lifetime – are of interest for the journal.

The main aim of the journal is to foster and encourage trans-disciplinary and pluri-methodological dialogues, research and reviews in order to propose new points of view and novel research approaches. In recent decades, numerous studies have demonstrated that the complex origins of behaviour such as learning, social behaviour, and psychological processes make it difficult to work out a comprehensive model for their development and control. Therefore, the use of model organisms has now become commonplace for researchers seeking to better understand these complex processes. Analysing model organisms is inherently easier than directly studying humans and, although caution must be taken when extrapolating this data to humans, many of the

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mechanisms at play (such as neurobiological, physiological genetic, and biochemical) are evolutionarily conserved across a wide variety species (Flint & Corley, 1996).

Thus, the use of animal models is a powerful technique for addressing the genetic factors that are involved in specific behaviours. For example, the characterisation of genetic mutations in mice and rats has produced models of anxiety, depression, and even empathy as well as numerous psychiatric disorders. Indeed, it has been shown that rodent emotionality is governed by the central nervous system and has a genetic basis, and that there are neuropharmacological and neuroanatomical parallels with human anxiety. More recently, Jeon et al. (2010) found that fear could be induced in mice that have only observed this emotion in other mice. This provides a good example of the use of this model organism for understanding the genetic and physiological processes associated with empathy. The authors suggest that the anterior cingulate cortex, which has also been linked to human empathy, is a structure involved in social modulation of emotional responses and learning in mice, supporting the idea that some of the components of complex human emotional behaviour are also conserved in rodents.

More recently, a number of lower organisms such as c.elegans, drosophila, and zebrafish are being utilised to genetically dissect complex behaviour. What these models lack in behavioural complexity they make up for by the powerful array of techniques available for studying them. More specifically, the development of genetic tools allowing for the spatio-temporal control of gene expression, such as the Cre-lox or the Gal4/UAS systems, provides the opportunity to dissect genetic and molecular pathways involved in behavioural control. When combined with suitable behavioural assays, these approaches may shed light on the molecular basis of emotions and psychological processes in humans (Gerlai, 2010; Norton & Bally-Cuif, 2010).

Furthermore, many of these organisms are amenable to high throughput screens, such as mutagenesis or pharmacological compounds, which allow researchers to rapidly identify genes associated with certain behaviours or to identify compounds that could be useful in treating certain psychological disorders. When this is combined with human genetics, such as identifying multiple susceptibility genes associated with specific conditions, researchers are able to create models in which multiple loci are disrupted, thus providing representative animal models of complex human disorders.

Thus it is our belief that the combination of different approaches, ranging from all human sciences to genetic/pharmacological studies in mammalians or lower organisms, would greatly improve our knowledge and understanding of behavioural neurosciences. It is in this context that *Socioaffective Neuroscience & Psychology* aims to stimulate multidisciplinary research into the central nervous system and its complex relationship with the surrounding social environment. We encourage researchers from different fields to submit original research papers, reviews and synthesis, or opinion papers by and/or between researchers from different fields, and we hope that *Socioaffective Neuroscience & Psychology* will stimulate and articulate a dialogue between those disciplines that engage in research where social and affective neuroscience are beginning to converge.

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