

Special Issue

Brain Functional Lateralization in Animals

Message from the Guest Editor

Brain structural and functional asymmetries have been described for both vertebrate and invertebrate species. A different specialization of the right and left hemisphere for processing environmental stimuli and for controlling different categories of behaviour has been reported. Research on several vertebrate species has shown that the right hemisphere is specialized for processing novel and clearly arousing stimuli and is involved in the expression of intense emotions (e.g. aggression, escape behaviour and fear). The left hemisphere, instead, is specialized for the categorization of familiar stimuli, for the control of well-established patterns of behaviour and for the expression of pro-social and approaching behaviour. Functional asymmetries are often manifested as a side bias in behaviour, which reflects the animals' positive or negative (valence) perception of a stimulus. Therefore, the knowledge of behavioural and functional brain lateralization has a particular relevance for improving animal welfare...

Guest Editor

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Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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