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## NEUROCOGNITIVE PERSPECTIVE OF PROSOCIAL AND ANTISOCIAL BEHAVIOURS IN HUMAN: EMERGING RESEARCH AND SOCIAL IMPACT

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Evolution of mankind is deeply rooted in communicative skills that increase prosocial behaviour over aggression. Using prosocial language and behaviour, politicians gain public support and social approval. However, neuro-cognitive mechanisms of such rational behaviour are trivial, which can be considered as a scientific tool for modulating global policies of peace, cooperation and harmony. So far, neuro-cognitive studies have not been directed towards how our brain anticipates prosocial and antisocial congruent and incongruent behaviours. In this direction, author examines the effective intervention of linguistic valences of prosocial and antisocial stimulus while conducting electroencephalographic experiments on human brain. Participants performed a judgment task following prosocial and antisocial words in sentences in which target words were either congruent or incongruent with upcoming prosocial or antisocial words (e.g. he established a friendship with others because he wanted to terrorize people). Their results show that processing of antisocial word requires larger neurocognitive resources as compared to prosocial one, which is corroborated with our behavioural response time suggesting higher response time for antisocial than prosocial words. Early P100 showed a larger peak for antisocial than prosocial words in frontal regions, whereas N400 amplitudes were higher for prosocial than antisocial words in pre-frontal regions. Hence, antisocial stimulus activates dorsolateral prefrontal cortex, which is responsible for cognitive control. However, prosocial stimulus shows greater activation in the region of superior temporal sulcus (STS), which is linked with moral judgments. Moreover, the influence of prosocial language and behaviour has found to adapt neural plasticity in the brain. Our findings suggest that prosocial content is processed very rapidly while engaging optimum neural resources for automatic processing of language in the context of cooperation and conflict. These outcomes broaden our knowledge about the importance of neurocognitive mechanisms of prosocial language, offering theoretical insights into the sociocognitive theory of human behaviours and language processing.

## BIOGRAPHY

Shashikanta Tarai has obtained his PhD from Indian Institute of Technology, Chennai, India. After his PhD, he completed his Post-doctoral Research at the Centre of Behavioural and Cognitive Sciences (CBCS), University of Allahabad, India. He was one of the awardees of the University Grant Fellowship (2006-2011) and Cognitive Science Initiative Fellowship (2012-2014) sponsored by University Grant Commission and Department of Science and Technology, Government of India. He is currently serving as Assistant Professor in the Department of Humanities and Social Sciences, National Institute of Technology Raipur, India. He published more than 30 national and international journal and conference papers in the area of neurolinguistics, psycholinguistics, sociolinguistics and cognitive neuroscience of emotion, stress and neurodegeneration. He has presented his research accomplishments in Germany, Japan, Sri Lanka and United Arab Emirates.

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