

A REPORT ON THE DEC 2015 INTERNATIONAL CONFERENCE ORGANISED BY NIAS CONSCIOUSNESS STUDIES PROGRAMME

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A soulful rendering of the mantras by PhD scholar Naresh Keerthi from the Taittiriya Upanishad, taken from the Bhṛgu Vallī which is a philosophical dialogue on nature of reality between Sage Bhṛgu and his father Vāruni, marked the philosophical and an auspicious beginning of the International Conference on **Consciousness, Cognition and Culture: Implications for the 21st Century** organised by the NIAS Consciousness Studies Programme at NIAS (9-11 December 2015). The Conference was followed by a **Symposium** on physics and classical Indian traditions on 12 December 2015.



The conference hosted 250 participants, 24 expert speakers from across the globe, 100 young scholars, 15 corporate participants, with 7 sponsors (Tata Education Trust; Cognitive Science Research Initiative, DST; Science & Engineering Research Board; Defence Research & Development Organisation; Tata Steel; Tata Consultancy Services; & Indo-US Science and Technology Forum) and Nature INDIA as Media Partner, over 35 participating Indian Institutions and over 18 participating institutions from other countries.

Understanding “Consciousness” by a multidisciplinary and transdisciplinary approach bringing together philosophers, neuroscientists, computer and electrical engineers, mathematicians, psychiatrists, clinicians and psychologists was the aim of the conference. The spectrum of themes covered abstract and theoretical concepts on one side, while physical, biological, cultural, psychological and philosophical perspectives on the other.

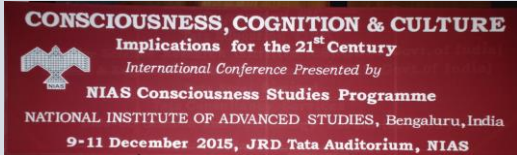
Day 1 of the conference started off with the session “Cognition and Consciousness across species” highlighting the evolutionary nature of mind and consciousness. Some fishes can be Machiavellian (Binoy V V), birds such as crows, rooks, ravens, jays and starlings have enhanced problem-solving intelligence (Soumya Iyengar), nonhuman primates can very well recognise their position in a social group and distinguish between its own motives from others, and even attribute some beliefs to others without having reflective access to its own mind (Anindya Sinha), and last but not the least, young chimpanzees possess exceptional working memory, often superior to those of human adults (Tetsuro Matsuzawa).

[Read the pre-Conference Book published by Nature INDIA](#)

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These intriguing findings force us to re-think notions of mind, cognition and consciousness across species and point to the fact that we are not in exclusive possession of these abilities.

The afternoon session on Day 1 dealt with understanding how the brain creates a perception of reality, the mechanism of decision making and how information flow in neurons in the brain can be estimated. Brain-Computer and Brain-to-Brain interfaces have enabled unique insights in to the workings of the brain for understanding cognition and for restoring and augmenting brain function (Rajesh Rao). Virtual reality based studies (Mayank Mehta) have addressed specifically how the brain creates perception of abstract space and time. Information theoretic complexity measures such as Lempel-Ziv complexity and Effort-to-Compress are useful to estimate flow of information in neurons (Nithin Nagaraj).

Day 2 of the conference started with a session on understanding the altered self – the self that is in the fringes due to neurological and neuropsychiatric challenges. Talks ranged from investigation of auditory hallucinations in patients with schizophrenia by means of analysing functional Magnetic Resonance Imaging scans (John P John), autism spectrum disorders in children leading to notion of ‘alternate selves’ (Prathibha Karanth), discovering the neurobiological basis of metacognitive dysfunction in schizophrenia using neuroimaging methods (Naren Rao) and a philosophical discourse on how a dozen differences in the way self seems between North American populations and East and South Asian populations can teach us about the nature and plasticity of the conscious self (Owen Flanagan).

The afternoon session of Day 2 of the conference saw researches arguing for pure experience – the Buddhist way of understanding subjectivity of experience and on their notion of self-awareness which makes my experience “mine” (Viktoria Lysenko); the radicality of Phenomenological approach that starts with “pure consciousness” as a basis for any claim of knowledge while completely suspending judgement (Michel Bitbol). We were also gently reminded that the deeply forgetful people (who are in grip of dementia syndrome) need our empathic moral consideration (Stephen G Post). The day ended with a public lecture by Georg Northoff (Director of Mind, Brain Imaging and Neuroethics Research Unit, University of Ottawa Institute of Mental Health Research, Canada) on what



brain imaging can tell us about Self and Consciousness. He presented recent data on the close and rather intricate relationship between self and resting state (self-rest overlap) and that both self and consciousness are the most basic functions of our brain's spontaneous activity and its spatiotemporal structure.

Day 3 of the conference started with a very interesting talk on the role played by metre, idiom, diction and figures of speech in classical Indian Poetry on aesthetic appeal, sublimated emotions and imagination brought into action (R Ganesh). Neural correlates of Vipassana as well as Rajayoga meditation provide valuable information on cognitive reserve capacity as well as the phenomenon of brain plasticity (Bindu M Kutty), while neural correlates of creativity suggest that creativity is indeed a complex cognitive ability constituted by specific neuropsychological functions (Jamuna Rajeswaran). The emerging neuroscience of third party punishment (Frank Krueger), the relationship between mathematics and mysticism (Ralph Abraham) and a computational model for consciousness – the human hybrid universal Turing machine (Henk Barendregt) were the other interesting talks.

Is quantum mechanics really needed to explain human consciousness and cognition? Or classical phenomena which also show similar entanglement effects could be enough? (Partha Ghose). The evening public lecture by the renowned Sanskrit scholar V N Jha (Professor and former Director, Centre of Advanced Study in Sanskrit, University of Pune) was a philosophical treat in Indian traditional systems. He eloquently expounded on the six 'vedic' darshanas (Indian philosophical schools) on the central question of 'Who am I?', the nature of reality and theories of creation which have been discussed over the ages.

Apart from these fascinating talks, the conference was marked with the poster presentations by young scholars from different parts of India as well as from other countries, on various topics related to Consciousness, Cognition and Culture; the entertaining and educating dance performance by Madhu Nataraj Kiran and group, and not to forget the exciting discussions on various topics amidst the participants during the tea and lunch breaks. And, on 12 December there was a half day Symposium that focused on the topic of quantum physics and reality.

"Consciousness" still remains an incomprehensible mystery. However, what the conference has achieved is to help us take one more baby-step in the right direction in unravelling this royal secret – the secret of all secrets!

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