

The Twentieth Conference
on
**Toward a Science of
Consciousness**

TSC 2013

MARCH 3 – 9, 2013

SOUVENIR-CUM-ABSTRACT BOOK



Centre for Consciousness Studies
Dayalbagh Educational Institute
(Deemed University)
Dayalbagh, Agra





*Dedicated
to the fulfillment of the lofty systemic Vision of*

*Most Revered
Dr. Makund Behari Lal Sahab
D.Sc. (Lucknow), D.Sc. (Edinburgh)
(1907-2002)*

*August Founder of Dayalbagh Educational Institute
and
Seventh Revered Leader of the Radhasoami Faith*



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on
**Toward a Science of
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***Dayalbagh
Educational
Institute
(Deemed University)***

“It is not a big University or big building or larger number of teachers or larger number of departments which raises the status of a University. It is the quality of the work that makes a University great.”

Revered Professor M.B. Lal Sahab
Founder Director, Dayalbagh Educational Institute



Dayalbagh Educational Institute

The Dayalbagh Educational Institute (Deemed University) is located in Dayalbagh, a self-contained colony renowned for its serene environment and secular establishments, in which its inhabitants lead an active, disciplined and cooperative community life, conforming to the high spiritual ideals of their faith. The Government of India conferred the status of a Deemed University on Dayalbagh Educational Institute (DEI), Dayalbagh, Agra under Section 3 of the University Grants Commission Act by notification No.F9-3/78-U-3 dated 16th May, 1981.



Education System & Mission Objectives

During the past 32 years of its existence, the University has successfully implemented an innovative, comprehensive and value based education system with the mission objective of evolving a complete man (a well-rounded total quality person). The education system fosters academic excellence along with holistic development and aims to bring about the physical, intellectual, emotional and ethical integration of the individual.

In pursuance of its mission objective of evolving a 'complete man', DEI's curriculum includes core courses and co-curricular activities which encourage the well-rounded development of the individual. These include the following: Cultural Education; Comparative Study of Religion; Scientific Methodology, General Knowledge and Current Affairs; Rural Development; Agricultural Operations; Social Service; and Co-Curricular Activities (cultural and literary activities, games and

sports). It also includes work based programmes that takes the form of practical training in areas related to the major subjects.

The distinguishing feature of DEI's education policy is its emphasis on combining excellence with relevance to contemporary needs. Recently, a high power committee set up by the Ministry of Human Resource Development ranked DEI 8th amongst 126 deemed universities in India.



Programmes

The Dayalbagh Educational Institute comprises six faculties (Arts, Commerce, Education, Engineering, Science, Social Sciences), twenty two departments, and two non-university colleges – DEI Technical College and DEI Prem Vidyalaya Girls Intermediate College. DEI also manages, both academically and administratively, schools in Madhya Pradesh, New Delhi and Roorkee.

Today, the University offers around 100 programmes at Certificate, Diploma, UG Degree, PG Diploma, PG Degree and Research Degree levels.





Well planned journey to reach University status and beyond

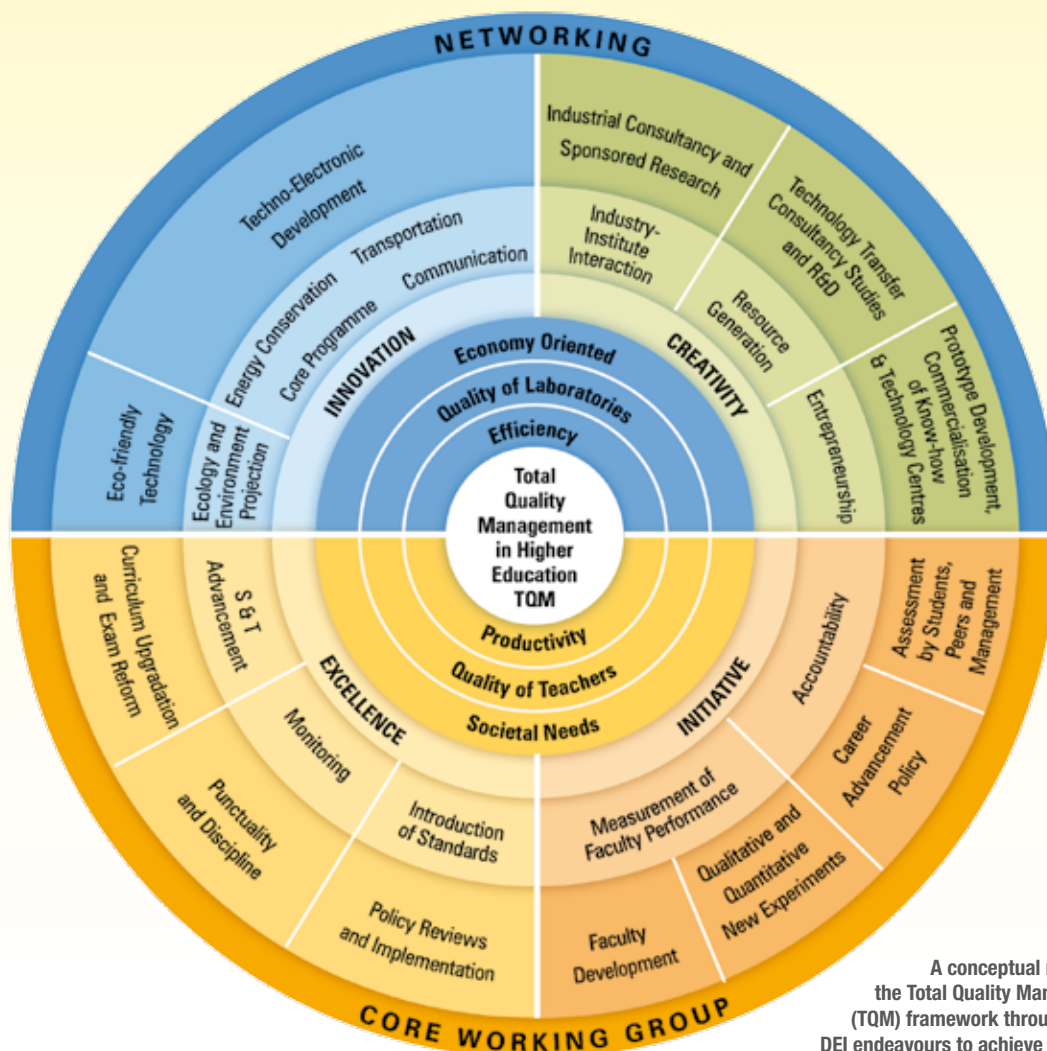
- **1917** Founding of 'REI' , Radhasoami Educational Institute, comprising a Middle School (became Degree College in 1947)
- **1927** Established Technical School (now a College)
- **1930** Established Prem Vidyalaya – Girls School (now an Intermediate College)
- **1947** Established Women's Training College.
- **1950** Established Engineering College
- **1973** Registered Dayalbagh Educational Institute
- **1981** **'Deemed University' status conferred by Ministry of Education & Culture under the UGC Act 3 of 1956**
- **2004** Established Women's Polytechnic and Start of Distance Education Programme
- **2008** Established DEI-ICT Distance Education Centre at MTV Puram, Tamil Nadu & Soami Nagar, New Delhi
- **2009** Established DEI-ICT Distance Education Centre at Rajaborari-Timarni, District Harda, MP
- **2010** Established the Quantum-Nano Systems Centre: Research and Technology Park
- **2011** Established DEI-ICT Distance Education Centre at Bangalore and the Centre for Consciousness Studies at DEI

Focus on Quality

Using the medium of an innovative, comprehensive and flexible education policy, DEI attempts to chisel out the total quality person through a persistent focus on imparting quality education. In its pursuit of quality education, DEI has instituted an Internal Quality Assurance Cell (IQAC) based on the specific guidelines of the National Assessment and Accreditation Council, an autonomous body set up by the UGC. The activities of the IQAC

envelop the University central administrative structure, University departments, P.G. centres and every component of the University system.

DEI relentlessly strives towards an institutionalized quality control process through the following quality focused approach: Admission Criteria -> Curriculum Design -> Programme Selection -> Curriculum Implementation -> Evaluation -> Employability



A conceptual model for the Total Quality Management (TQM) framework through which DEI endeavours to achieve quality in Higher Education (Professor P.S. Satsangi, 2002, 'TQM in Higher Education and Technical Education')

Squid devices in
4 kelvin pulse
tube cooler



New Initiatives

Special Areas of Advanced Research

The institute has identified priority areas of strategic research with a view to develop interdisciplinary initiatives. There are special flagship research areas with credible eminence in the Institute such as: Quantum-Nano Computing, Soft Computing, Multimedia Technologies, Virtual Instrumentation, Microwaves & Photonics, Peace Education, Human Rights Education, Environmental Sciences, Theology, and Indian Music.

Quantum-Nano Systems Centre: Research and Technology Park

The Quantum-Nano Systems Centre is a multidisciplinary centre at DEI with partners at IIT Kanpur, IIT Delhi and IIT Madras, besides several international collaborators. With a focus on the rapidly growing area of quantum- and quantum information sciences, the Quantum-Nano Systems Centre provides an environment for scientists and mathematicians to explore the fundamental physical characteristics of quantum systems, to devise and implement prototype quantum computers, and to develop quantum algorithms and novel applications.

Through a vigorous program of lectures, seminars, and workshops, the Centre stimulates intellectual exchange among students, faculty, and academic partners.

Its mission is to aggressively explore and advance the application of quantum-nano systems to a vast array of relevant information processing techniques by creating a truly unique environment that fosters cutting-edge research and collaboration between researchers in the areas of computer science, engineering, mathematical, chemical and physical sciences. The Quantum-Nano Systems Centre has recently installed SQUID devices (Superconducting Quantum Interference Devices) which is one of the few facilities of this kind in the country.

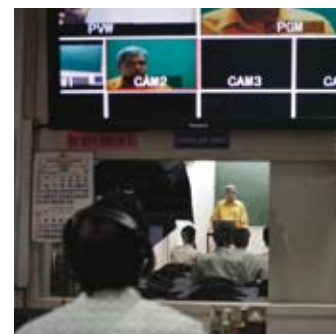
Centre for Consciousness Studies

A Centre for Consciousness Studies has recently been established at the Dayalbagh Educational Institute. The Centre is located adjacent to the Quantum-Nano Systems Centre in the Research and Technology Park. Researchers from various disciplines including Theology, Management, Sanskrit, Hindi, English, Psychology, Zoology, Botany, Chemistry, Mathematics, Physics, Computer Science, Commerce and Education have started contributing to this subject area, ensuring breadth and depth in the study of this complex inter-disciplinary field. The Centre proposes to develop techniques for studying spirit-mind-brain interactions, modeling and chemical synthesis of microtubules, practical studies on meditation and other related fields.

Distance Education Programme

The Distance Education programme of DEI was launched in 2004 to extend the benefits of its high quality, innovative, and value based education system to all sections of society via distance mode and in particular, to the weaker sections and women in remote, backward and tribal areas in various parts of the country for their empowerment and economic development. Towards fulfillment of this objective, a number of employment-oriented vocational programmes are offered with nominal fees. In addition to these, higher level programmes are also offered which are helping students from backward and tribal areas to join the mainstream. The Distance Education Council (IGNOU) has given recognition to the Distance Education Programme of DEI. On the recommendation of the Joint Committee of UGC-AICTE-DEC, approval has been accorded to a number of programmes for being conducted in distance mode.

The distance education programmes are offered in 76 Study Centres in India and 6 abroad. The programmes are backed by laboratories, workshops and state-of-the-art communication technology including EDUSAT satellite-interactive terminals which provide two-way interaction between the University and its Study Centres. Some of the programmes are taught via the synchronous on-line mode, some are web-based, while others are in the blended education mode with a mix of traditional instruction and e-education.



Programmes Currently Offered in Distance Mode

1. **Certificate Programmes**
 - ▶ Modern Office Management & Secretarial Practice
 - ▶ Textile Designing & Printing
 - ▶ Textile Technology
 - ▶ Dress Designing & Tailoring
 - ▶ Motor Vehicle Mechanic (4-wheeler)
 - ▶ Wireman
 - ▶ Electrician
 - ▶ Office Assistant – cum – Computer Operator
 - ▶ Cutting & Sewing
2. **Under Graduate Degree**
 - ▶ B.Com (Hons)
 - ▶ BBM (Hons)
3. **Post Graduate Diploma**
 - ▶ Theology
 - ▶ Journalism & Mass Communication
 - ▶ Computer Science & Applications
4. **Post Graduate Degree**
 - ▶ MBA



The Institute has upgraded four Study Centres, where it now offers in synchronous mode, diploma, degree and higher level programmes to students admitted to DEI with flexibility of attending classes at multiple locations through state-of-the-art information communication technology (ICT). These DEI-ICT Distance Education Centres are located at:

1. Melathiruvankatanathapuram (MTV Puram), Tamil Nadu (a remote rural and backward area)
2. Rajaborari-Timarni (Harda District, MP, a tribal area)
3. Soami Nagar, New Delhi (near IIT Delhi)
4. Bangalore

A number of higher level programmes of the University are conducted in these Centres including the following: Diploma (3 years) in Electrical Engineering and Electronics; B.Ed.; Post Graduate Diploma in Journalism and Mass Communication; MBA; MA in Theology; M.Phil in Theology, Electronics, Computer Science; and Ph.D.

It is noteworthy that students of the distance education programme are treated at par with conventional mode students with respect to entitlement for awards, Institute medals, admission via lateral entry from Certificate to Diploma programmes etc.

Collaborations

Towards its vision of excellence in education, the Dayalbagh Educational Institute has signed Memoranda of Understanding for research and teaching collaboration with prestigious institutes such as University of Maryland, USA; Michigan State University, University of Missouri, USA; University of Waterloo, Canada; Indian Institute of Technology, New Delhi; Indian Institute of Technology, Kanpur; Tata Institute of Fundamental Research, Mumbai; International Centre for Genetic Engineering & Biotechnology, New Delhi & Indian Institute of Management, Bangalore.

Interaction with Industry

The institute understands the need to constantly interact with the industry to take feedback on relevant requirements. This is facilitated through two direct mediums: Industry-Institute Partnership Cell (IIPC) and The Association of Alumni of Dayalbagh Educational Institutions (AADEIs)

Industry-Institute Partnership Cell

The IIP Cell, which was established in 2002, has made noteworthy progress in furthering the cause of industry-institute collaboration

- ▶ With a senior Professor as its Chief Coordinator and two Project Assistants, the Cell helps in providing consultancy and testing facilities to different industrial houses
- ▶ The Cell also coordinates activities relating to entrepreneurship development
- ▶ It helps in organizing short-term courses, seminars & lectures by eminent industry persons

The Association of Alumni of Dayalbagh Educational Institutions

To help the University to achieve its goals, the Alumni of the Institute formed The Association of Alumni of Dayalbagh Educational Institutions (AADEIs) in the year 2006. Some important contributions of AADEIs include:

- ▶ Help in placement of DEI students through the DEI-Alumni Placement Assistance Cell (DEI-APAC)
- ▶ Student mentor programme for guidance in projects and training
- ▶ Short courses on Soft Skills and Computer Skills (Basic & Advanced)
- ▶ Guest lectures and domain specific short courses
- ▶ Training & Development Workshops on special topics (Time Management, Interview Skills etc.)
- ▶ Undergraduate student awards for research projects
- ▶ Establishment of ICT (Information Communication Technology) enabled Distance Education Centres in New Delhi and Bangalore
- ▶ Creation of Chairs of Excellence in various departments



Vision 2031

The Dayalbagh Educational Institute has embarked upon a bold initiative, VISION 2031 and formulated a comprehensive and progressive Strategic Plan for 2012-2031, with the goal to become a top teaching-cum-research Institute through an exemplary system of education. To establish Total Quality Management across all activities of the University, the Plan encompasses undergraduate and postgraduate education, research, infrastructure, information and communication technology and campus development.

Keeping in line with the Institute's unique scheme of innovative, comprehensive, inter-disciplinary and value-based education that fosters academic excellence with holistic development, the Strategic Plan is a road map for providing an environment to produce well-rounded students who are ready to take on challenges and be leaders with a fine blend of top quality academics, work-experience and a strong value system.

The Strategic Plan is action-oriented and embodies the spirit of "Why not?" It will be implemented in four phases, each of five years, with clear targets set for each phase.

The Institute has accepted this challenge and is confident of achieving success with the cooperation of faculty, staff, students, alumni and all other well-wishers.



“The D.E.I. Education Policy is an innovative, comprehensive and flexible higher and technical education policy with the mission objective of evolving a “complete man” (total quality person), which conforms to the concept of total quality management and is geared for transformation of India to a knowledge society.”

“Any quality policy has the essential ingredients of innovation, excellence, creativity and initiatives and the DEI Education Policy has excelled in all these respects, and continues to be relevant for all times.”

Revered Professor P.S. Satsangi Sahab
Chairman, Advisory Committee on Education,
Dayalbagh Educational Institutions
and Former Director (1993 – 2002), Dayalbagh Educational Institute



About Dayalbagh

Dayalbagh



Mubarak Kuan

Dayalbagh, the 'Garden of the Merciful', was founded by Huzur Sahabji Maharaj, Sir Anand Sarup Kt., the Fifth Revered Leader of the Radhasoami Faith on Basant Panchami day, the 20th of January, 1915, by a simple ceremony of planting a mulberry tree. It is the Headquarters of the Radhasoami Satsang Community and retains its pristine serenity and harmony with nature. While providing modern amenities to its residents, it has grown into an eco-village.

Dayalbagh is situated one and one-half kilometers to the North of the historic city of Agra. It has an area of 6.51 sq kms. It is a self-contained colony of followers of the Radhasoami Faith, well known for its charitable, educational, agricultural and industrial institutions, its way of life, marked with

simplicity and the spirit of cooperation pervading the multifarious activities of its inmates in social and economic spheres, conforming to the spiritual ideals of the Radhasoami Faith.

Dayalbagh is renowned as an educational hub. A middle school was established from the start of the colony and educational institutions at higher education levels and courses were opened from time to time continuously culminating in a unitary institution named Dayalbagh Educational Institute which was accorded a Deemed University status in 1981 by the Government of India. The Institute has a unique, innovative, value-based, comprehensive and multi-disciplinary educational system with the mission objective of evolving a 'complete man' (i.e., a well-rounded total quality person). The programmes

offered by the Institute are linked to work experience at the undergraduate level, organized through different Faculties, all of which impart post-graduate education and provide research facilities as well.

In order to extend the benefits of its innovative, well-rounded and holistic educational system to the weaker sections of the population in different parts of the country in a cost effective manner, the Institute initiated its Distance Education Programme in 2004. Today, it conducts its educational programmes in 75 Study Centres in India and 3 abroad. The main objectives of the distance education programme, viz. to provide employment-oriented vocational education to weaker sections of the society and to facilitate empowerment of women via the development of working skills, are met by offering a number of vocational programmes with very low fees. In addition to these, higher level programmes are also offered which are helping



Lectures and expert guidance are given in synchronous mode to various study centres through the EDUSAT

students from backward and even tribal areas to join the mainstream. The educational programmes are backed by laboratories and workshops and state-of-the-art communication technology including EDUSAT satellite-interactive terminals which provide two-way interaction between the University and its Study Centres. Some of the programmes are taught via the synchronous on-line mode, some are web-based, while others are in the blended education mode.

The colony also has a Nursery-cum-Play Centre for little children, two Primary Schools, an Intermediate College for boys and one for girls, and a Technical College. Besides, the colony has a School of Languages, which teaches regional and foreign languages; a School of Art & Culture to provide training in Music, Dance and Handicrafts; a Tailoring School; an Indian Music Centre and a School of Dress Designing and Interior Decoration. A Day Boarding School provides special tutorial facilities to school students.

The colony satisfies the criteria for its recognition as an eco-village.



REI building

Rain water harvesting and solar power generation are being gradually extended to different sections of the colony. More trees get continuously planted in an already green locality. Use of plastic is discouraged and their disposal from homes is being practiced regularly. The biodegradable waste is converted into fertilizers.

Seva (selfless service) of the Sant Satguru and the community is a basic tenet of the Faith. Hundreds of Satsangis – young and old, men and women, render Seva in the agricultural fields every day in the munificent presence of the Sant Satguru. In the community kitchen, women, many of them old, perform such Seva as their physical condition permits. Articles of daily need, like cloth, herbal medicines are produced in small units by Satsangis and are supplied at cost. Retired and in-service government officers, teachers, army officers, private sector executives, professionals and others render honorary service in their areas of specialization as and when they can. The objective of life here is to



establish a new order where men and women live and work in harmony for the service of mankind.

The citizens of all ages have a life-style which includes maintenance of health through physical exercise, vigorous regular life and good pure vegetarian nutritious food. The Colony has a Gaushala with about 600 heads of cattle. No cattle, male or female, young or old, is sold. Milch cows yield milk which meets the requirements of the colony on subsidized low charges. Besides, milk is supplied free to young school children during school hours.

Dayalbagh provides the community, and people in the neighbourhood free medical services - consultation, testing



People working in fields, Dayalbagh colony (top)

as well as medicines in allopathic and alternate systems. A full fledged hospital, the Saran Ashram Hospital was established in 1926. It provides specialised medical services in several branches, including dental treatment, pathology testing, ultrasonography, E.C.G. and maternity service. Non-residents of Dayalbagh of all faiths and castes without distinction are the bulk of the recipients of medical care provided at the hospital and its several satellite clinics.

Dayalbagh is not only the name of the Satsang Headquarters and the township, but also of the spirit and the way of life of its citizens and the Guiding Spirit which presides over it. The colony is maintained and run so as to fulfill its object of having an atmosphere and environment conducive to the successful performance of devotional practices. It is hoped that myriad



versions of Dayalbagh would rise all over the country, spreading by example, the eternal message of “Better Worldliness” and that of “Fatherhood of God and Brotherhood of Man”.



Field work in Dayalbagh



TSC-2013
at Dayalbagh

DEI Centre for Consciousness Studies

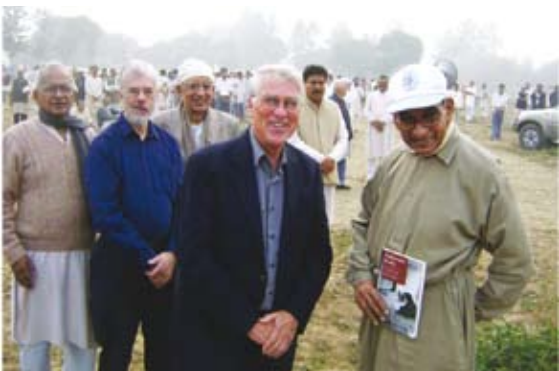
DEI is active in conducting research in the field of Consciousness Studies. Some of the major activities undertaken are listed below.



A. International Seminar on Spiritual Awakening : A Systems Approach to Address the Civilizational Crisis (SPAWSYS 2008): January 12-13, 2008

Dayalbagh Educational Institute organized an 'International Seminar on Spiritual Awakening : A Systems Approach to Address the Civilizational Crisis' (SPAWSYS 2008) on January 12-13, 2008. The Inaugural address was delivered by Prof. Peter H. Roe, Director International Exchange Programmes, University of Waterloo Canada entitled 'Spirituality, Religion and Civilization : A Systems Approach' and the Vision Talk was given by Prof. P.S. Satsangi, Chairman Advisory Committee on Education, Dayalbagh entitled 'On Systems Modelling of Macrocosm and Microcosm in the Domain of Spiritual Consciousness'. The Valedictory Function was presided over by Prof. Saul Sosnowski, Director, Office of International Programs, University of Maryland, College Park, USA with a video presentation of invited talk by Prof. Herman E. Koenig, Professor Emeritus, Michigan State University, USA entitled : 'The Nature of Science in Human Cultures : A Systemic Perspective'.

B. International Seminar on Religion of Saints ('Sants') – Radhasoami Faith : Spiritual Consciousness Studies (SPIRCON 2010) : November 12-14, 2010



Dayalbagh Educational Institute organized an International Seminar on Religion of Saints ('Sants') – Radhasoami Faith : Spiritual Consciousness Studies (SPIRCON 2010) on November 12-14, 2010. The Inaugural Talk was delivered by Revered Prof. Agam Prasad Mathur, former Vice-Chancellor of Agra University and Vision Talk by Revered Prof. Prem Saran Satsangi, Chairman, Advisory Committee on Education, Dayalbagh Educational Institutions. The Valedictory Talk was delivered by Prof. Mark Juergensmeyer, Professor of Sociology and Global Studies, and Director, Orfalea Center for Global and International Studies University of California, Santa Barbara. The plenary speakers included Prof. David C Lane and Prof. Andrea Lane, Mount San Antonio College,

USA; Prof. Daniel Gold, Cornell University, USA; Dr. Mark Graves, Santa Clara University, USA; Prof. P.N. Tandon, President NBRI; Prof. Jack Ellis, York University, Canada; Prof. Peter Roe, University of Waterloo, Canada; Prof. B. Les Lancaster, Liverpool University, UK; Prof. John Grayzel, University of Maryland, USA; Swami Jitatananda, Sri Ramakrishna Mission; Prof. Subhash Kak, Oklahoma State University; Prof. Volker Moeller, Germany and Mr. Emille Pellerin, France.



C. Establishment of 'Centre for Consciousness Studies'

Dayalbagh Educational Institute has established Centre for Consciousness Studies with the Inaugural Workshop, CONCENT 2011, held in October 2011. Student activities were organized in the run-up to the Inaugural Workshop such as a quiz competition on role of microtubules in the brain on consciousness in which nearly 800 students from all disciplines took active part. Since then, the Centre has been host to leading luminaries in the field from across the world such as Prof. Stuart Hameroff, University of Arizona; Prof. Jack Tuszynski, University of Alberta; Prof. Elizabeth Behrman,

Wichita State University; Prof. Anirban Bandyopadhyay, NIMS Japan; Prof. Vlatko Vedral, Oxford University and Prof. Lajos Diosi, Institute for Particle and Nuclear Physics, Budapest.

The research is progressing along very healthy lines and some of the suggestions made by experts have already found practical shape. This augurs well for promoting Consciousness Studies in true scientific sense as was visualized by Param Guru Maharaj Sahab, the third Revered Leader of the Radhasoami Faith, through his writing in Discourses on Radhasoami Faith. Pursuing that line, we are now homing in gradually, but surely, on making an impact on the world community internationally. Some of our preliminary efforts at building spiritual-psycho-physical quantum system model of the grand universe or cosmos, which is all inclusive, is a step in this direction. All Departments of the Institute have been taking considerable interest and have responded very positively to the floating of the interdisciplinary programmes towards consciousness studies. The centre involves researchers from all cross-sections including Botany, Zoology, Chemistry, Physics and Computer Science, Mathematics, Psychology, Management, Languages (English / Hindi / Sanskrit), Theology, Commerce, Education, Engineering and Medical Science. This is growing by leaps and bounds, and within a matter of a couple of months or so, it has made unbelievable progress to be noted by the international community so swiftly.

Brainstorming by Core Group on September 7, 2011

A brainstorming session was organized at the Centre for Consciousness Studies among core group of 11 researchers from various disciplines. A summary of the ideas that emerged from the discussion appears below.

Information-Centric Ideas :

- ▶ Organization of courses, seminars, workshops and summer programmes in the field (like CONCENT 2011) and a fortnightly colloquium / discussion forum to maintain regular interaction among interdisciplinary researchers in the field
- ▶ Develop a library of books and journals on consciousness at the Centre
- ▶ Support original research (both theoretical and experimental) in Consciousness Studies
- ▶ Develop interdisciplinary graduate courses in Consciousness Studies
- ▶ Have an online web support system (like vidayaprasar) with online courses, conferences and other resources
- ▶ Establish a lecture series in Consciousness Studies at DEI
- ▶ Promote a dialogue between Science and Religion
- ▶ Collaborate with other centres doing similar work in traditional and scientific ways

Experimental Ideas :

- ▶ Develop a First Year Undergraduate Lab on Microtubules where young students can experiment and be encouraged enough to pursue research later on at Master's and Doctoral levels
- ▶ Develop a whole-head SQUID system with superconducting magnetic shield for consciousness studies in the brain
- ▶ Develop Instrumentation facilities like ECG, EEG, MEG, Functional MRI, GSR (Galvanic Skin Response) for studies of consciousness levels

Tracks

A few tracks were identified where focused research groups can start working with regular interaction as well as discussion among the tracks :

1. Synthesis of Microtubules (from tubulin and GTP) starting with simple experiments for undergraduate students and ultimately leading to research developments like qubit realization
2. Modelling of Microtubules (e.g. as Quantum Hopfield Nets) and development of novel microtubule-based neural networks with far greater computational capabilities than present day ANNs
3. Consciousness Studies in the Brain (e.g. whole head SQUID system) to extend the existing work in the field of indirect measurement of spirituality
4. Quantum System Modelling of Mind : Spirit-Mind-Brain Interactions
5. Analytic research in areas relating to literature, arts and media to exploration of consciousness. Courses have been proposed on 'Consciousness, Media, Arts and Literature', 'Quantum Uncertainty and Consciousness in Modern Literature' and 'Post Humanism and Consciousness'



D. Inaugural Workshop of Centre for Consciousness Studies (CONCENT 2011) : October 1-2, 2011

The Inaugural Workshop of the Centre for Consciousness Studies was organized on October 1-2, 2011 at the Centre for Consciousness Studies. There were 21 oral presentations and around 60 posters in the Workshop. A Souvenir-cum-Abstract book was released on the occasion.

The Vision Talk was delivered by Revered Prof. P.S. Satsangi Chairman, Advisory Committee on Education, Dayalbagh Educational Institutions, entitled 'Cosmology of Consciousness : Towards Quantum-Theoretic Systems Modelling; Spirit-Mind-Brain Interactions'. The Inaugural Talk was delivered by Prof. Jack Tuszynski, Department of Physics, University of Alberta, Edmonton, Canada, entitled 'Molecular Models of Information Processing, Memory Encoding and the Action of Anesthetics at the Level of Individual Neurons with Connections to Neurological Disorders'. The Valedictory Talk was delivered by Prof. Elizabeth Behrman, Professor of Physics and Mathematics, Wichita State University, USA, entitled 'Quantum Neural Networks and the Problem of Consciousness'.



A few comments of eminent scientists and researchers for the Souvenir-cum-Abstract Book of CONCENT 2011 are reproduced below as an indicator of the enthusiasm:

► **Prof. Marcelo Gleiser**, *Appleton Professor of Natural Philosophy, Professor of Physics and Astronomy, Dartmouth College:*

“Few questions, if any, are more challenging than understanding the nature of human consciousness. The road to progress must be multidisciplinary, joining the efforts of researchers and thinkers of many different areas of knowledge. It is thus with great satisfaction that I send my votes for a great future to the Centre for Consciousness Studies. May the discoveries to be made there shine as a beacon for the advancement of knowledge and human understanding across the world.”

► **Prof. Mark Juergensmeyer**, *Professor of Sociology and Global Studies, and Director, Orfalea Center for Global and International Studies, University of California, Santa Barbara :*

“It is appropriate that DEI has embarked on an interdisciplinary and visionary approach to pioneering consciousness studies. It is an institution that has a distinguished history of combining the best of scientific investigation with the best of religious and cultural analysis. The new Centre for Consciousness Studies is an exciting and important venture, and I wish you well in realizing its potential.”

► **Swami Ved Bharati:**

“I congratulate the Dayalbagh Educational Institute for establishing the Centre for Consciousness Studies and bringing together so many eminent and accomplished researchers. May the researches being carried out by these women and men of knowledge be a source of inspiration to all to take their personal meditation practices deeply and seriously. I wish the inaugural conference a resounding success guided by the holy founders of Dayalbagh and of all other spiritual Lineages.”





Professor Stuart Hameroff



Professor Vlatko Vedral



Dr. Anirban Bandhopadhyay

E. International School on Quantum and Nano Computing Systems and Applications (QANSAS 2011) : December 1-4, 2011

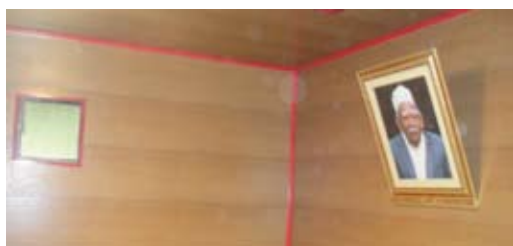
The International School on Quantum and Nano Computing Systems and Applications QANSAS 2011 was organized at Dayalbagh Educational Institute from December 1-4, 2011. The event witnessed four days of buzzing activity in Quantum and Nano Computing with a wide spectrum of topics being discussed including vision talks, tutorials and invited talks, from graph theoretic quantum field modelling to topological quantum computers, string theory and applications of quantum systems.

The event was inaugurated by Prof. Stuart Hameroff, Director, Centre for Consciousness Studies, University of Arizona with his talk entitled "Are microtubules topological quantum computers? Update on the Penrose-Hameroff Orch OR theory". Prof. P.N. Tandon, President, National Brain Research Centre was the Guest of Honour. In the ensuing sessions, there was active participation with 27 invited speakers from top academic and research institutes like Oxford University, University of Cambridge, University of Waterloo, Perimeter Institute Waterloo, University of Maryland College Park, University of Montreal, NIMS Japan, IIT Delhi, IIT Kanpur, TIFR Mumbai, ISI Delhi Centre, IISER Kolkata, Jaypee Institute Noida, Jawaharlal Nehru University, Banaras Hindu University, and of course, DEI, Dayalbagh.



F. International School on Quantum and Nano Computing Systems and Applications (QANSAS 2012) : November 28 – December 2, 2012

International School on Quantum and Nano Computing Systems (QANSAS 2012) was organized from November 28–December 2, 2012. A special forum on ‘Quantum Theory and Science of Consciousness’ was organized on November 28 with a Vision Talk entitled “Neuro-environmental Cognitive Spiritual Phenomenology” delivered by Revered Prof. P.S. Satsangi, Chairman, Advisory Committee on Education, Dayalbagh Educational Institutions. The Inaugural Talk was delivered on November 29 by Prof. Lajos Diosi, co-author with Sir Roger Penrose of the Diosi-Penrose criteria. Prof. Diosi is with the Institute for Particle and Nuclear Physics, Budapest, Hungary. There was a Panel Discussion on the concluding day on the topic “Consciousness, Decoherence and Measurement Problem in Quantum Theory” chaired by Prof. P.K. Kalra, Director, IIT Rajasthan.



G. Magnetically Shielded Room at DEI

A Magnetically Shielded Room with SQUID Gradiometer has been fabricated at DEI Quantum-Nano Systems Centre. Fabrication was completed and preliminary data gathered on December 15, 2012. It will be used for consciousness related experiments, both in individual and group modes.



H. Colloquia Series and Course on Basic Neuro and Cognitive Sciences

A colloquia series was started at the Centre for Consciousness Studies from October 31, 2011. All Departments of the University have been classified into 2 groups – Group A with 14 departments (Faculty of Arts, Commerce, Education and Social Sciences) and Group B with 7 departments (Faculty of Science, Engineering). On one turn, there are 3 presentations of 30 minutes each – 2 from Group A Departments and 1 from Group B Departments, selecting in alphabetical order from each group, so that there is sufficient intermingling of faculty members from diverse disciplines. On days, when an eminent speaker can be arranged, there will be an invited talk also. In the first cycle, departments were requested to present how they can contribute to the Centre for Consciousness Studies and their existing work in the field.

The second cycle is now in progress. All interested faculty members / research scholars of DEI are welcome to attend the colloquia. A course on Basic Neuro and Cognitive Sciences has also been started in July 2012. A capsule of this course will also be offered as a Workshop in the TSC 2013 conference. A team from DEI Centre for Consciousness Studies also visited Centre for Behavioural and Cognitive Sciences, University of Allahabad and a Round-Table Discussion was subsequently held at DEI also with delegates from CBCS, Allahabad.





I. TSC@DEI 2012: March 31, 2012

As a run-up to TSC 2012 at Arizona, Centre for Consciousness Studies organized a Symposium (TSC@DEI 2012) on March 31 on 'Eastern Philosophy and the Science of Consciousness' to discuss, debate and crystallize our ideas to be presented before an international audience at Tucson. The high point of the symposium was the Key Note Talk by Revered Prof. P.S. Satsangi, Chairman ACE, entitled 'Eastern Philosophy in the Spiritual Traditions of Oriental Saints ("Sants"): An Interpretive Structural Model Representation'. Prof. Joy Sen, Dept. of Architecture and Regional Planning, IIT Kharagpur delivered a plenary talk entitled 'Principle of Complementarity' - its application in consciousness studies (using 'psycho-somatic' (microscopic) and 'wave-particle' (macroscopic) conjugate variables and their interconnections)' at the symposium.



J. The Twentieth Conference on Toward a Science of Consciousness (TSC 2013) : March 3-9, 2013

The Inauguration of the DEI Centre for Consciousness Studies in October 2011, and QANSAS series of events have generated considerable interest in the DEI community, which has been responding extremely well and extremely fast to the scientific study of consciousness, as witnessed at their fortnightly colloquia quite regularly. As a result of events like Annual Winter School QANSAS 2008 to 2012 organized every year, SPAWSYS 2008, SPIRCON 2010 and CONCENT 2011, and the rich presentations made by DEI community at various international fora, such as TSC at Tucson, ASSC at Sussex and Swiss Biennial at Lucerne, international audiences has been impressed by the holistic approach adopted at DEI to study of consciousness in a scientific manner.

Prof. Stuart Hameroff, who delivered the Inaugural talk at QANSAS at DEI in December 2011, and who is the Chief Architect of Toward a Science of Consciousness, Tucson Conferences held alternate year in Tucson, Arizona and held every other year in any of the other countries of the world, on leaving this place, offered to host The Twentieth Conference on Towards a Science of Consciousness (TSC 2013) in DEI, Dayalbagh. His offer was gladly accepted and DEI teams fanned out in all parts of the world to invite leading experts in the field. A large delegation from DEI visited TSC 2012 at Tucson, a team was sent to the Swiss Biennial on Arts, Science and Technics at Lucerne, Switzerland and another team to the 16th Annual Meeting of the ASSC at Sussex.



DEI Contingent with Sir Roger Penrose at Lucerne DEI Contingent at TSC 2012

Submission of Abstracts

The first call for papers was distributed in March 2012, even before TSC 2012 at Arizona, by DEI team visiting Europe for Swiss Biennial at Lucerne. Publicity was also done in a big way at TSC 2012 at Tucson. Last date for submission of abstracts was extended to December 30, 2012 (from December 15, 2012) and also notified on the DEI and TSC websites. The number of submissions crossed 460 on December 30, compared to 400 for TSC 2012.

Plenary Talks

There are 23 plenary speakers as per detailed programme attached. Prof. James Barrell, author of *Inner Experience and Neuroscience* (MIT Press, 2012) will deliver the Inaugural Address on March 5. This will be followed by a Vision Talk by Revered Prof. P.S. Satsangi, Chairman, Advisory Committee on Education, Dayalbagh Educational

Institutions.

Workshops

Prof. Menas Kafatos (Chapman University), Prof. Stuart Hameroff (University of Arizona) and Dr. Deepak Chopra (Chopra Foundation) will be conducting workshops, apart from Workshop on Basic Neuro and Cognitive Sciences by DEI team.

Forum on Eastern Philosophy and Science of Consciousness (March 4)

Eastern Philosophy Forum will feature a keynote talk by Prof. James Hagelin, Maharishi University, USA. Prof. P. Sriramamurti, Dr. Vijai Kumar and Mr. Prem Prashant will be the DEI speakers.

Concurrent Sessions (Oral Talks) and Poster Sessions

TSC 2012 had 24 concurrent sessions (8 in parallel x 3, so a person could attend at most 3 such sessions in the whole conference). TSC 2013 will have 24 concurrent sessions, but only 3 in parallel x 8, so a person can attend 8 such sessions. Each concurrent session has 5 papers, so there will be a total of 120 concurrent talks. There are around 120 posters in 3 sessions.

Panel Discussion (March 9)

Panel Discussion will be held on March 9, 2013 on the topic Inner Science and Natural Sciences. The Moderator of the Panel is Mr. Prem Prashant. Other Panelists are mentioned in the programme attached.

Pre-event rehearsal (February 23, 2013)

A pre-event rehearsal was organized on February 23, 2013 with a few concurrent talks, a brief Eastern Philosophy Forum and an Invited Talk by Prof. A.L. Agarwal, Former Professor, IIT Delhi, to fine tune the logistics for TSC 2013.



Programme TSC 2013

DAYALBAGH EDUCATIONAL INSTITUTE
The Twentieth Conference
on
Toward a Science of Consciousness
TSC 2013
Programme

Venues : **Convo Hall** – DEI Convocation Hall; **QNC** – Quantum-Nano Systems Centre;
CCS – Centre for Consciousness Studies; **SLR** – Southern Lab Room near CCS

SUNDAY, MARCH 3, 2013

0800 – 1100	Poster Session 1 QNC Lawns &
0800 – 1220	Workshop on Basic Neuro and Cognitive Sciences QNC + CCS
1220 – 1400	BREAK
1400 – 1600	Concurrent Sessions C1, C2, C3 C1 – QNC; C2 – CCS; C3 - SLR &
1400 – 1700	Poster Session 2 QNC Lawns

MONDAY, MARCH 4, 2013

0800 – 1100	Poster Session 3 QNC Lawns &
0900 – 1100	Concurrent Sessions C4, C5, C6 C4 – QNC; C5 – CCS; C6 - SLR
1100 – 1300	Workshop on Consciousness in the Universe – Review of Orch OR Theory <i>S. Hameroff</i> QNC + CCS

1300 – 1400	BREAK
1400 – 1600	Forum on Eastern Philosophy & Science of Consciousness <i>J. Hagelin, P. Prashant, P.S. Murti, V. Kumar</i> QNC + CCS
1600 – 1800	Concurrent Sessions C7, C8, C9 C7 – QNC; C8 – CCS; C9 - SLR

TUESDAY, MARCH 5, 2013

0800 – 0830	REGISTRATION Convo Hall
0830 – 0945	Workshop on Self in Science <i>M.Kafatos</i> Convo Hall
0945 – 1145	Plenary Talks P1, P2, P3 <i>K R Rao, AK Mukhopadhyay, Sangeetha Menon</i> Convo Hall
1145 – 1200	BREAK
1200 – 1400	INAUGURATION <i>James Barrell, Rev. Prof. P.S. Satsangi</i> Convo Hall
1400 – 1500	BREAK
1500-1700	Plenary Talks P4, P5, P6 <i>John Hagelin, Peter Bruza, Peter Walling</i> Convo Hall
1700 – 1715	BREAK
1715 – 1800	CULTURAL PROGRAMME Convo Hall

WEDNESDAY, MARCH 6, 2013

0800 – 1000	Concurrent Sessions C10, C11, C12 C10 – Convo Hall; C11 – QNC; C12 - CCS
1000 – 1300	Plenary Talks P7, P8, P9, P10 <i>Anthony Hudetz, Jack Ellis, Peter Roe, Subhash Kak</i> Convo Hall

1300 – 1400	BREAK
1400 – 1600	Plenary Talks P11, P12, P13 <i>Ovidiu Brazdau, N Srinivasan, Steven Laureys</i> QNC + CCS
1600 – 1800	Concurrent Sessions C13, C14, C15 C13 – QNC; C14 – CCS; C15 - SLR

THURSDAY, MARCH 7, 2013

0800 – 1000	Concurrent Sessions C16, C17, C18 C16 – Convo Hall; C17 – QNC; C18 - CCS
1000 – 1300	Plenary Talks P14, P15, P16, P17 <i>V. Gurzadyan, Jack Tuszynski, T. Craddock, A. Bandyopadhyay</i> Convo Hall
1300 – 1400	BREAK
	TAJ TRIP for Invited Speakers

FRIDAY, MARCH 8, 2013

0800 – 1000	Concurrent Sessions C19, C20, C21 C19 – Convo Hall; C20 – QNC; C21 - CCS
1000 – 1300	Plenary Talks P18, P19, P20, P21 <i>Menas Kafatos, Rocco Gennaro, Chris Fields, A. Horatschek</i> Convo Hall
1300 – 1400	BREAK
1400 – 1600	Workshop on Healing, Transformation and Higher Consciousness <i>Deepak Chopra</i> QNC + CCS
1600 – 1800	Concurrent Sessions C22, C23, C24 C22 – QNC; C23 – CCS; C24 - SLR

SATURDAY, MARCH 9, 2013

0630	Visit to Fields For Invited Speakers
0915 – 1045	Plenary Talks P22, P23 <i>Joy Sen, P. Pylkkanen</i> Convo Hall
1045 – 1100	BREAK
1100 – 1200	PANEL DISCUSSION Inner Science and Natural Sciences <i>R Gennaro, P Walling, A Bandyopadhyay, J Tuszynski, M Kafatos, S Hameroff, J Sen, PS Murti, P Prashant–Moderator</i> Convo Hall
	BREAK



Concurrent Talks

C1 EXPERIENTIAL AND EXPERIMENTAL STUDIES I

March 3, 1400 – 1600 hours, Quantum-Nano Systems Centre

- | | |
|-----|--|
| 92 | EFFECT OF MUSIC ENRICHMENT PROGRAMME ON CONSCIOUSNESS OF MENTALLY CHALLENGED CHILDREN
<i>Manu Sharma, Sona Ahuja, Ranjeet Kaur Satsangi</i> |
| 177 | CONSCIOUSNESS AND THE VISUAL PROCESS: A SEARCH FOR THE FUNCTIONAL AND NEURAL CORRELATES OF PHENOMENAL CONSCIOUSNESS
<i>Asaf Ben Shalom</i> |
| 181 | MAN –AN IDEAL EQUIPMENT FOR THE MEASUREMENT OF CONSCIOUSNESS
<i>Soam Prakash</i> |
| 194 | A CORRELATIONAL STUDY OF HAPPINESS AND SPIRITUAL INTEREST
<i>Ranjeet Satsangi, Guru Pyari Prakash</i> |
| 201 | INTUITION AS A NECESSARY CONDITION FOR ACCESSING HIGHER STATES OF CONSCIOUSNESS AND GOD REALIZATION.
<i>Mani Sundaram, Dayal Saini</i> |

C2 EXPERIENTIAL AND EXPERIMENTAL STUDIES II

March 3, 1400 – 1600 hours, Centre for Consciousness Studies

- | | |
|-----|--|
| 208 | MEASURING INTUITIVE CONSCIOUSNESS
<i>Nandita Satsangee, Prem Pyari Dayal, Surila Aggarwala, Soami Piara Satsangee</i> |
| 218 | EFFECT OF MEDITATION ('OM' CHANTING) ON ALPHA EEG AND GALVANIC SKIN RESPONSE: MEASUREMENT OF AN ALTERED STATE OF CONSCIOUSNESS
<i>Himani Anand, Ira Das</i> |
| 258 | ON MEASURING REFLECTIONS OF CONSCIOUSNESS: A NEURONAL APPROACH
<i>Jyoti Kumar Arora, Sant Kumar Gaur, Dayal Saran Mishra, Sanjay Bhushan</i> |
| 402 | INVESTIGATION OF METHODS AND DEVELOPMENT OF A DEVICE TO REMOTELY DETECT HUMAN EMOTIONS AND HENCE CONSCIOUSNESS
<i>Vijay Malhotra</i> |
| 429 | CORRELATIONAL STUDY OF TRIGUNA TEST WITH MYERS-BRIGGS TYPE INDICATOR (MBTI) TEST ON YOGA PRACTITIONERS : COMPARISON OF EAST-WEST APPROACH TOWARDS CONSCIOUSNESS
<i>Shobha Bhasin, Ashwani Bhasin, Gurdev Roy, Sukhdev Roy</i> |

C3 EDUCATION AND CONSCIOUSNESS

March 3, 1400 – 1600 hours, Southern Lab Room

- | | |
|-----|--|
| 58 | EFFECT OF VOLUNTARY LIBRARY READING ON HIGHER CONSCIOUSNESS OF STUDENTS
<i>Sarla Paul, Nandita Satsangee, Soami Piara Satsangee</i> |
| 93 | RAISING CONSCIOUSNESS IN MUSIC HIGHER EDUCATION
<i>Anna-Karin Gullberg, Heloisa Feichas</i> |
| 105 | ETHICAL EDUCATION FOR REACHING HIGHER LEVELS OF CONSCIOUSNESS
<i>Vasantha Kumari Devulapalla, Durga Prasada Rao Chilakamarthi</i> |

- 204 TEACHERS' FREEZING AND SPIRITUAL INTELLIGENCE: A COMPARATIVE STUDY
Preeti Manani, Rajkumari Kalra, Anand Pyari
- 217 INTUITIVE CONSCIOUSNESS AND CREATIVITY AMONG UNIVERSITY STUDENTS
Ira Das, Poonam Sharma

C4 PSYCHOLOGY, NEUROSCIENCE AND CONSCIOUSNESS I

March 4, 0900 – 1100 hours, Quantum-Nano Systems Centre

- 35 THE NATURE OF EPISTEMIC FEELINGS
Santiago Arango-Muñoz
- 75 THE PATHWAY FROM EMOTIONAL MATURITY AND COMPETENCE TO SPIRITUALITY
Vineeta Mathur, K.Maharaj Kumari
- 81 CONDITIONING OF STUDENT CONSCIOUSNESS: AN EXPERIMENTAL STUDY WITH REFLECTIONS ON SIGMUND FREUD'S ICEBERG MODEL
Bhakti Kumar, Sugandha Khurana, Kavita Kumar
- 161 EAST MEETS WEST: JUNG'S DEPTH PSYCHOLOGY AND PATANJALI'S YOGA SUTRAS
Leanne Whitney
- 221 ENHANCING INTUITION THROUGH YOGA AND MEDITATION
Surila Agarwala, Prem Pyari

C5 PSYCHOLOGY, NEUROSCIENCE AND CONSCIOUSNESS II

March 4, 0900 – 1100 hours, Centre for Consciousness Studies

- 273 EFFECT OF YOGA AND MEDITATION ON DIFFERENT DIMENSIONS OF CONSCIOUSNESS
Sona Ahuja
- 285 SELECTIVE ATTENTION AND IMPULSIVITY
S.P. Sinha, Yukti Goel
- 310 THE VOICE IN THE HEAD: THE ROAD AHEAD
Hari Narayanan V
- 327 THE IMPACT OF MIND WANDERING ON EMOTIONAL REGULATION
Li-Hao Yeh, Fang-Ying Wen
- 400 THE SELF ORGANIZING UNIVERSE : APPLYING COMPLEXITY THEORY TO THE QUESTION OF PANPSYCHISM
Neil Theise, Menas Kafatos

C6 MEDICINE AND CONSCIOUSNESS

March 4, 0900 – 1100 hours, Southern Lab Room

- 20 PRINCIPLES AND PRACTICE OF PAIN AND SUFFERING MANAGEMENT WITH CLINICAL HYPNOSIS AND MEDITATIVE STAGES IN THE MIND-BODY GAP
M. Paola Brugnoli, Siddharth Agarwal
- 56 A STUDY OF THE LEVEL AND DEVELOPMENT OF CONSCIOUSNESS IN NEWBORN TO CHILDHOOD UP TO 2YRS OF AGE
Anjoo Bhatnagar, Bindu Dhingra, Vijai Kumar

- 97 NOË'S ENACTIVE APPROACH CANNOT HANDLE PHANTOM LIMBS
Jason Ford
-
- 168 THE OBSERVER WITHIN CONSCIOUSNESS:EEG PERSPECTIVES
Russell Hebert, Russell Hebert
-
- 216 CONSTRUCTION AND STANDARDIZATION OF ANGER SCALE: VALIDATION WITH THE HELP OF EEG
Shraddha Sharma, Ira Das
-

C7 CHEMISTRY OF CONSCIOUSNESS

March 4, 1600 – 1800 hours, Quantum-Nano Systems Centre

- 243 PHYSIOCHEMICAL STUDIES OF MICROTUBULES
Aarat Kalra, Shiroman Prakash, Amit Mishra, Harinipriya Sheshadri
-
- 278 IN-VITRO MICROTUBULE ASSEMBLY AND ITS ROLE IN BRAIN COGNITION
Pushpa Sahni
-
- 314 N-CADHERINS IN NEURON-NEURON INTERACTION AND ITS POSSIBLE LINK TO SIGNAL TRANSDUCTION BY VOLTAGE GATED CALCIUM CHANNELS
Amol Tandon, Satendra Gupta
-
- 362 MERE PROTEIN MOLECULES? OR MUTATING MACHINES?--HOW EVOLUTION OF POSTTRANSLATIONAL MODIFICATIONS (PTMS) LED TO MICROTUBULE-BASED STRUCTURES WITH CONSCIOUSNESS-SPECIFIC PLASTICITY
Jim Beran
-
- 378 DIFFERENTIAL POST TRANSLATIONAL MODIFICATION (PTM) PATTERNS: DECIPHERING THE MOLECULAR BASIS OF CONSCIOUSNESS
Uday Sarup, Amla Chopra
-

C8 BIOLOGY AND CONSCIOUSNESS

March 4, 1600 – 1800 hours, Centre for Consciousness Studies

- 122 THE CENTRAL NERVOUS SYSTEM IN THE BODY AND CONSCIOUSNESS
N Prem Kumari
-
- 131 DOES WORKING MEMORY LOAD & SCOPE OF ATTENTION INFLUENCE VISUAL AWARENESS?
Amrendra Singh, Narayanan Srinivasan
-
- 250 RESONANCE IN MICROTUBULES : THE POSSIBLE KEY TO MACROSCALE BIOLOGICAL QUANTUM COHERENCE & THEIR ROLE AS CIRCULAR WAVEGUIDES
Saatviki Gupta
-
- 299 EVIDENCE FROM FIELD STUDIES OF CUTTLEFISH BEHAVIOUR AND INTRASPECIFIC COMMUNICATION TO SUPPORT POTENTIAL INVERTEBRATE CONSCIOUSNESS
Karina Hall
-
- 376 EVOLUTION OF SPECIES : WHERE DID DARWIN GO WRONG
Prem Dantu
-

C9 COGNITIVE SCIENCES AND CONSCIOUSNESS

March 4, 1600 – 1800 hours, Southern Lab Room

- | | |
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| 32 | NATURE FROM WITHIN - A SHORT DEFENSE OF THE DARWINIAN ARGUMENT FOR PANPSYCHISM
<i>Michael Blamauer</i> |
| 77 | A THREE QUBIT MODEL OF CONSCIOUSNESS INTEGRATED JUNG'S PERSONALITY
<i>Hans Raj Kandikonda, Maharaj Kumari Kandikonda</i> |
| 117 | ROLE OF SPATIAL ATTENTION IN EMOTION AWARENESS
<i>Maruti Mishra, Narayanan Srinivasan</i> |
| 215 | A STUDY OF RELATION BETWEEN EGOTISM AND ATTACHMENT AMONG MARRIED AND UNMARRIED WOMEN
<i>Ira Das, Archana Sharma</i> |
| 345 | INTEGRATION OF SUBJECTIVITY IN KNOWLEDGE GENERATION THROUGH ARTISTIC PRACTICES.
<i>Luis Coquenão, Luis Miguel Girao</i> |

C10 DYNAMICS OF CONSCIOUSNESS

March 6, 0800 – 1000 hours, DEI Convocation Hall

- | | |
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| 33 | CONSCIOUSNESS MANAGEMENT SYSTEM (C.M.S.): A FEEDBACK-INTEGRATED CONSCIOUSNESS SYSTEM DYNAMICS
<i>Sanjay Bhushan</i> |
| 55 | FRIENDSHIPS, INTIMACY AND EXPANDING CONSCIOUSNESS: THE 'QUALIA' OF SOCIAL RELATIONSHIPS IN WOMEN
<i>Priya Sebastian</i> |
| 109 | DEVELOPMENT OF CONSCIOUSNESS MODEL FOR ANALYSING JOB TO BUSINESS DECISION: AN EXPERIENTIAL STUDY
<i>K.Santi Swarup, Mukti Srivastava Narain</i> |
| 265 | DYNAMIC OPTIMAL POLICY OF CONSCIOUSNESS MANAGEMENT USING MARKOV DECISION PROCESSES (MDP) FRAMEWORK
<i>T. Guru Sant, Anoop Srivastava, Sanjeev Swami</i> |
| 461 | BUSINESS DYNAMICS MODELING OF ENTREPRENEURIAL CONSCIOUSNESS : A PROPOSITIONAL INVENTORY
<i>Rohit Rajwanshi, Mukti Sri-Narain, Karan Narain, Anoop Srivastava, Sanjeev Swami</i> |

C11 FOUNDATIONS OF CONSCIOUSNESS I

March 6, 0800 – 1000 hours, Quantum-Nano Systems Centre

- | | |
|----|---|
| 65 | THE SPIRITUAL, THE REAL AND THE PHENOMENAL- THE DILEMMA OF A VISIONARY, WHO AM I? WHAT AM I?
<i>Santosh Kumari Srivastava, Gurnam Saran Srivastava</i> |
| 70 | ISSUES WITH THE DEFINITION OF 'UNCONSCIOUS THOUGHT' IN UNCONSCIOUS THOUGHT THEORY
<i>Sumitava Mukherjee, Narayanan Srinivasan</i> |
| 98 | THE AWAKENING OF CONSCIOUSNESS FOR THE SUSTAINABILITY OF HUMAN BEING
<i>Laura Andréa Costa</i> |

- 155 THE SCOPE OF CONSCIOUSNESS
Gary Comstock
- 157 MIND OVER MATTER: AN ARGUMENT FOR FUNDAMENTAL MENTALITY
Josh Rasmussen, Jerry Walls

C12 FOUNDATIONS OF CONSCIOUSNESS II

March 6, 0800 – 1000 hours, Centre for Consciousness Studies

- 239 REALITY, MIND AND THE UNIVERSE
Maanvi Mathur, Swamipyari, Umang Verma
- 240 WHY WE DO THIS AND WHY WE DONT
Eleonora Lorek
- 271 RETHINKING THE CONSCIOUSNESS AND INTELLIGENCE SINGULARITY
Carl Adams
- 320 STUDYING CONSCIOUSNESS: PRESENT AND FUTURE
Surat Sinha, S.P Sinha
- 389 QUAN-CIOUSNESS? IS CONS-CIOUSNESS NOT ENOUGH?
C.M. Markan

C13 EASTERN PHILOSOPHY I

March 6, 1600 – 1800 hours, Quantum-Nano Systems Centre

- 11 TOWARD A COMPREHENSIVE EAST-WEST THEORY OF BRAIN, MIND AND REALITY
Paul Evans
- 53 THE SCIENCE OF SUMIRAN AND IT'S BENEFITS
Neha S, Anjoo and Preeti Sinha
- 67 CREATIVITY AND COSMIC CONSCIOUSNESS IN THE EASTERN DEVOTIONAL TRADITION
Sanjay Prasad, Deepa Prasad and Dharampal Satsangi
- 72 A VEDIC APPROACH TO THE THEMES OF TSC 2013
Robert Boyer, Park Hensley
- 82 DEFENDING COMPLEXITY: A SAMKHYA APPROACH TO THE HARD PROBLEM
E. Alexander Howe

C14 EASTERN PHILOSOPHY II

March 6, 1600 – 1800 hours, Centre for Consciousness Studies

- 222 BEAUTY CONSCIOUSNESS IN THE MUSICAL VERSIFICATIONS OF THE GHATRAMAYAN
Agam Kulshreshtha
- 329 SANT MAT: PATH OF THE ULTIMATE SPIRITUAL CONSCIOUSNESS
Anand Rao D
- 330 THE CONCEPT OF CONSCIOUSNESS IN KASHMIR SHAIVISM AND ITS COMPARISON WITH
ADVAIT VEDANTA
Madhunangia Madan

- 339 ADVANCED STUDY IN THE ESSENCE OF SPIRITUALITY IN THE RAGAS OF HINDUSTANI AND CARNATIC MUSIC SYSTEMS
Binathi Gunty
- 415 QUANTUM VIBRATIONAL THEORY OF CONSCIOUSNESS INSPIRED BY EASTERN SPIRITUAL TRADITIONS
Sukhdev Roy

C15 THEORIES OF CONSCIOUSNESS

March 6, 1600 – 1800 hours, Southern Lab Room

- 61 A CONCLUSIVE CONCEPTUAL FRAMEWORK FOR CONSCIOUSNESS: ROADMAP FOR THE DEVELOPMENT OF A FUNDAMENTAL THEORY
Joachim Keppler
- 87 AN INTROSPECTIVE VIEW TO CONSCIOUSNESS: APPLYING 'MASLOW'S NEED THEORY' TO CONSCIOUSNESS
Maharaj Saran, Sumati Vuppuluri and Guru Saran
- 188 THEORIES, CONSTRUCTION AND CAPABILITIES
Richard D Gill
- 375 CHALLENGES AND PROGRESS IN STUDY OF CONSCIOUSNESS
Randhir Tiwary, Prem Pyari Tiwary
- 417 RATIONALE FOR CONSCIOUSNESS IN BUSINESS ORGANISATIONS
Madhuri Malhotra and Sameer Malhotra

C16 QUANTUM INFORMATION AND CONSCIOUSNESS

March 7, 0800 – 1000 hours, DEI Convocation Hall

- 51 OBJECTIVITY AND SUBJECTIVITY IN QUANTUM MECHANICS
John Small
- 303 QUANTUM HEBBIAN LEARNING: A QUANTUM APPROACH TOWARDS FEATURE MAP FORMATION
Priti Gupta and CM Markan
- 342 CLARIFYING QUANTUM CONSCIOUSNESS
S Prakash
- 462 PROTEIN POLARIZATION INDUCED BLOCH WAVES IN AXONAL FIBRES
Kanad Ray, Ritu Agarwal, L.A. Cacha, R.R. Poznanski
- 463 GRAPH THEORETIC QUANTUM SYSTEM MODELLING FOR NEURONAL MICROTUBULES AS QUANTUM HOPFIELD NETWORKS
Dayal Pyari Srivastava, Vishal Sahni, Prem Saran Satsangi

C17 GROUP TECHNIQUES I

March 7, 0800 – 1000 hours, Quantum-Nano Systems Centre

- 54 AWARENESS AND EFFORT TOWARDS MEDITATION AND ITS ROLE IN DEVELOPING INTUITIVE ABILITIES: A MANAGERIAL PERSPECTIVE.
Rupali Das, Tarun Srivastava

- 69 REFLECTIVE LEARNING AS A TOOL FOR ENHANCING CONSCIOUSNESS: AN EMPIRICAL STUDY OF NON-GOVERNMENTAL ORGANIZATIONS(NGOS) IN AGRA, INDIA.
K.Santi Swarup, Sudha Ratnam
- 174 MEDICAL-ESOTERIC DECISION SUPPORT SYSTEM FOR UNIVERSAL (GROUP) CONSCIOUSNESS
Prem Kumar Saxena, Prem Prashant, Fateh Singh
- 178 USE OF INTUITIVE CONSCIOUSNESS IN INDUSTRIAL CREDIT GRANTING DECISIONS OF INDIAN PRIVATE AND PUBLIC SECTOR BANKS
Swati Khatkale
- 209 EFFECT OF MEDITATION IN CREATIVE PROCESS: AN EXPERIMENTAL STUDY IN NEW PRODUCT DESIGN
Sumita Srivastava, Ankit Sahai, Jyoti Kumar Arora, Sanjeev Swami, Dayal Saran Mishra

C18 GROUP TECHNIQUES II

March 7, 0800 – 1000 hours, Centre for Consciousness Studies

- 335 THE MOST UNCOMMON COMMON INDIA - AN ORIENTAL PERSPECTIVE ON SES (SOCIO-ECONOMIC-SPIRITUAL) MODEL OF CONSCIOUSNESS AND ITS TRANSITIONS
Saurabh Mani, Arti Mani
- 344 INTERVENTIONISM OF CLASS-CONSCIOUSNESS IN THE LIFE OF CONSTRUCTION SITE WORKERS IN INDIA: A PHENOMENOLOGICAL APPROACH
Poornima Jain, Deepika Chauhan, Gaurav Sharma
- 388 CONSCIOUSNESS IN PUBLIC ADMINISTRATION: ANCIENT AND MODERN PERSPECTIVE
Sunita Satsangi, Parul Verma, Priya Singh
- 390 HOMOTOPY OF CATEGORY THEORY OF CONSCIOUSNESS
Aarathi Kothalanka, D Pandey
- 433 INTUITION, CONSCIOUSNESS AND CORPORATE DECISION MAKING
Nagesh Pydah, Prem Sewak Sudhish, B Aashiq

C19 LANGUAGE AND CONSCIOUSNESS

March 8, 0800 – 1000 hours, DEI Convocation Hall

- 68 ENANTIOSEMY IN LANGUAGE AND THE STATUS OF OPPOSITES IN EXPERIENCE
Maxim Stamenov
- 113 THE RELAXING POWER OF REPETITIVE SPEECH
Aviva Berkovich-Ohana, Amos Arieli, Roni Kahana, Rafael Malach
- 212 “CONSCIOUSNESS, INTUITION AND SENTIENCE: WHAT IS AN AUTHOR?”
Malvika Gupta
- 213 NARRATING THE ENIGMA: A LITERARY APPROACH TO CONSCIOUSNESS
Sonal Singh, Ram Singh
- 361 COSMOS, THEOS, SELF AND INTENTIONALITY’ IN BECKETT’S ABSURDIST WAITING FOR GOD ‘O’(T) : A STUDY IN CHRISTIAN EXISTENTIAL CONSCIOUSNESS, CONSCIOUSNESS OF THE UNIVERSAL MIND AND ULTIMATE CONSCIOUSNESS OF RADHASOAMI FAITH
Bani Dayal Dhir, V Prem Lata

C20 PHYSICS AND MATHEMATICS OF CONSCIOUSNESS

March 8, 0800 – 1000 hours, Quantum-Nano Systems Centre

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| 27 | ORGANIC METAPHYSICS AS A FRAMEWORK FOR UNDERSTANDING CONSCIOUSNESS
<i>John Pickering</i> |
| 100 | INTENTION EXPANDS TIME: A DURATION JUDGMENT STUDY USING TEMPORAL BISECTION
<i>Mukesh Makwana, Narayanan Srinivasan</i> |
| 202 | EXPLORING MENTAL TENDENCIES TO MODEL FUZZY CONSCIOUSNESS VECTOR FOR PEACEFUL CO-EXISTENCE: A FUZZY COGNITIVE APPROACH.
<i>S. K. Gaur, D.S. Mishra</i> |
| 280 | NATURAL FRACTAL PATTERNS IN THE REALM OF SCIENCE OF CONSCIOUSNESS
<i>Anand Mohan, Prem Prashant</i> |
| 340 | SPIRITUAL ENERGY THEORY-SET, A THEORY OF CREATION OF UNIVERSE AND CONSCIOUSNESS & ITS REPRESENTATION BY BOND GRAPH THEORY , A SYSTEMS APPROACH
<i>Mani Sundaram</i> |

C21 RELIGION AND MEDITATION

March 8, 0800 – 1000 hours, Centre for Consciousness Studies

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| 34 | A STUDY IN PANCYCHISM WITH REFERENCE TO BECKETT'S WAITING FOR GODOT, THE BOOK OF JOB AND PARAM GURU HUZUR MAHARAJ'S NIJ UPDESH AS A RESPONSE TO DARREL W. RAY'S THE GOD VIRUS: HOW RELIGION INFECTS OUR LIVES AND CULTURE
<i>Gur Pyari Jandial</i> |
| 43 | IMPROVISATION, MEDITATION, AND INTERSUBJECTIVE CONSCIOUSNESS: A NON-DUAL INTEGRAL PERSPECTIVE
<i>Ed Sarath</i> |
| 64 | ESCHATOLOGY: A PERSPECTIVE FROM RELIGION AND SCIENCE
<i>Somayajulu Nemani, Madhulika Nemani</i> |
| 308 | RELATIONSHIP BETWEEN MEDITATION AND PERSONALITY
<i>Sudhir Sahni, Renu Sahni</i> |
| 395 | CONSCIOUSNESS AS PER CHRISTIANITY, ISLAM AND HINDUISM
<i>Anuj Chandra, Anjali Sinha</i> |

C22 CONSCIOUSNESS AND SOCIAL SCIENCES I

March 8, 1600 – 1800 hours, Quantum-Nano Systems Centre

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| 41 | CONSCIOUSNESS IS CENTRAL TO THE FUNCTIONING & THE OBJECTIVE OF THE UNIVERSE
<i>Sandeep Gupta, Gur Saroop Sood</i> |
| 163 | THE NIGHTMARE OF SLEEP PARALYSIS: FEAR OF DEATH AND AWAKENING OF CONSCIOUSNESS.
<i>Oreet Rees</i> |
| 200 | COLOUR CONSCIOUSNESS-AN INSIGHTFUL JOURNEY
<i>Radhika Seth, Meenakshi Kumar, Parul Bhatnagar</i> |
| 207 | TOWARDS THE CONSCIOUSNESS OF THE MIND
<i>Hui Chu Tsai, Hari Cohly, Devendra Chaturvedi</i> |

- 226 HUMILITY AND SINCERITY MAKES A LEVEL-5, GREAT LEADER: TRUE HUMILITY;
SINCERITY & LOVE FOR LORD IS AN ENLIGHTENED SOUL
Yogesh Narula, Deepak Sachan, Sandhya Narula

C23 CONSCIOUSNESS AND SOCIAL SCIENCES II

March 8, 1600 – 1800 hours, Centre for Consciousness Studies

- 341 A CONTINUUM OF ENLIGHTENMENT IN ADULTS?
Jeffery Martin
- 368 PHILOSOPHY OF PRODUCTION AND CONSUMPTION OF DAYALBAGH PRODUCTS
CONDUCTIVE TO AWARENESS OF SOCIAL RESPONSIBILITY AND SPIRITUAL AWAKENING
OF INDIVIDUALS
Meenakshi S Swami, Gur Pyari Prakash and Swami Prakash Srivastava
- 380 PHYSICAL WORLD AS A MEANS FOR CONSCIOUSNESS EVOLUTION
Chhaya Satsangi, Soamiprasad Satsangi
- 393 A CONSCIOUSNESS BASED APPROACH FOR ENERGY SAVING CONSCIOUSNESS: A CASE
STUDY
Vikas Pratap Singh, Ravindra Arora, Kumar Vaibhav, D K Chaturvedi
- 445 LAW OF DEPENDENT ORIGIN (PRATITYASAMUTPADA) :TOWARD A SCIENCE OF
CONSCIOUSNESS
Prabha Sharma

C24 SCIENCE OF SPIRITUALITY

March 8, 1600 – 1800 hours, Southern Lab Room

- 37 CRITICALITY OF SUBJECTIVE INFORMATION IN THE SCIENCE OF CONSCIOUSNESS.
Gursaroop Sood, Prem Prashant
- 120 ENERGY CHANNELS OF SPIRIT AND MIND IN HUMAN BODY
Sriramamurti P, Santosh Kumar Kakulapati
- 129 INTUITIVE CONSCIOUSNESS – IT'S EXISTENCE IN DIFFERENT LIFE FORMS AND ITS
EXPLANATION
Asha Juneja, Shikha Verma
- 186 DAWN OF REALITY AS PER CONSCIOUSNESS LEVELS AND ROLE OF SCIENCE
Gaurav Mathur
- 232 SCIENTIFIC BASIS OF EMOTIONAL CONSCIOUSNESS
Swamipyari, Maanvi Mathur, Umang Verma



Posters List

POSTER SESSION I

(March 3, 0800 – 1100 hours, Quantum-Nano Systems Centre Lawns)

Experiential and Experimental Studies, Education and Consciousness, Psychology, Neuroscience and Consciousness, Medicine and Consciousness, Chemistry of Consciousness, Biology and Consciousness

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| 39 | Art and Human Consciousness: A Study in Cognitive Neuropsychology Based on the Impact of Art on Cognitive Skills in Pre-School Children
<i>Sant Pyari Kumar</i> |
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| 42 | Friendliness of Negative Atmospheric Ions towards Consciousness
<i>MM Srivastava, Shalini Srivastava</i> |
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| 59 | Does Consciousness and Electrons exist in Water - a Necessity for All Forms of Life?
<i>Ingrid Fredriksson</i> |
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| 86 | Consciousness and Immune-Strength Profile: A Correlation
<i>Amla Chopra, Vineeta Mathur, Neha Sharma, Sandeep Paul, P. Sriramamurti</i> |
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| 90 | The Impact of Meditation on Vocal Sound Quality
<i>Radha Pyari Sandhir, Sumati Vuppuluri</i> |
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| 91 | Appropriate and Potentially Fruitful Methods for Studying Consciousness
<i>Asha Satyavolu, Gagandeep Nigam</i> |
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| 96 | Environmental Consciousness among People to Save our Planet Earth
<i>Gagan Deep, Seema Gupta</i> |
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| 99 | Artificial Intelligence: The New Frontier in Consciousness Studies (Two Case Studies)
<i>Akshar Srivastava, Prem Prakash Srivastava</i> |
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| 130 | A Study of Consciousness of University Students in Relation to their Academic Achievement and Level of Education
<i>Sadhna Sharma, Sona Ahuja, Deepika Satsangi</i> |
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| 143 | Spiritual Intelligence and Subjective Well-Being of Elderly Living at Home and in Old-Age Shelter Homes
<i>Kavita Kumar and Swati Tripathi</i> |
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| 144 | Needs and Consciousness
<i>Sunita Satsangi, Gagandeep Nigam, Parul Verma</i> |
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| 150 | A Novel Energy Systems Approach to Combat the Climate Change : Environmental Consciousness
<i>Ranjit Kumar, Ponnala Vimal Mosahari, Rajeev Satsangi, Gurdeep Singh</i> |
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| 152 | Nature : A Gateway to Consciousness
<i>Pooja Sahni, Prakash Sahni</i> |
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| 165 | Personal Consciousness of Teachers and Organisational Climate: A Pilot Study with Reference to Educational Institutes
<i>Shalini Nigam, Sanjay Jain, Purnima Bhatnagar</i> |
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| 182 | Consciousness Measurement Problem in Man, Mosquitoes and Microbes: A Review
<i>Richa Kumari, Soam Prakash</i> |
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183	Higher Consciousness : An Experiential Journey <i>Vinit Kumar</i>
189	“Let us take a Leap into the Future, by Knowing the Inner Orbit of Consciousness through Meditation” <i>Mani Sharma, Bharti, Binathi Bingi</i>
199	Man, Know Thyself <i>Kanta Arora</i>
210	The Science of Higher Consciousness, Meditation and Attention: Transformations in Brain Structure – Function and Role of Microtubules <i>Saatviki Gupta, Nandita Gupta, Arun Kumar Gupta</i>
219	Driver's Consciousness and Tire Inflation in Context to Car Safety <i>Majer Singh, Devender Kumar Chaturvedi</i>
225	Holistic Healing and Consciousness <i>Siddharth Agarwal, Sapna Agarwal, Vijai Kumar</i>
238	Mathematical Formula for Spiritual Quotient and Emotional Quotient as Indicator of Level of Consciousness <i>Anirudh Kumar Satsangi, Ankita Satsangi</i>
259	Quantum Brain Biology and Consciousness <i>Preetham Pulavarthi, Ramani Pulavarti</i>
276	Controlling Attentional Switching in Neuromorphic Binocular Rivalry Model of Machine Consciousness <i>Garima Kapur, Hans Mohan, Vipul Saxsena, CM Markan, VP Pyara</i>
277	Personality Correlates of Intuition <i>Kumar Ratnakar and Surila Agarwala</i>
281	A Comparative Study of Consciousness and Metacognition of Extrovert and Introvert Students <i>Preet Kumari, Priyanka Khandelwal</i>
296	Consciousness and Medical Therapies (Consciousness the Way of Life and Treatment – Rajaborari) <i>Vijay Shanker Lal Srivastava, Kundan Srivastava</i>
300	A Systemic Model of Information and Communication Technology (ICT) for Enhancing Learning and Evolving Consciousness <i>Praveen Shivhare, Chhavi Shivhare, Neha Shivhare</i>
305	An Analytical Study of Consciousness among Students of Rural Area Regarding the Educational Policies Implemented by U.P. Government –A Case Study of Agra Region. <i>Anisha Satsangi</i>
318	The Effectiveness Of Body Mind Meditation in Coping with Stress <i>PK. Mona, Prachi Sharma</i>
324	Lacunae in Current Medical Understanding of Death <i>Sandeep Saluja, Raag Saluja</i>

331	Awareness of Consciousness Levels to Transcend the Path Leading to Ultimate Consciousness <i>Charandasi Dantu</i>
332	Food and Higher Consciousness <i>B. Saravanan, Lokesh Arora, Divya Arora</i>
333	Effect of Ambience and Design on Consciousness <i>Bulbul Shrivastava, Binti Shrivastava, Tuhina Singh</i>
337	True Happiness through Consciousness <i>Bhawna Johri, Shyam Sunder Aneja</i>
365	Depression and Consciousness <i>Josiah Shindi, Kana Sani</i>
367	Consciousness of Self Awareness through Self Introspection and State of Being Quiet in Pablo Neruda <i>Richa Sinha, Ashok Kumar Sinha, Madhurima Sinha</i>
372	Subjective Visual Experience and Neural Firings <i>John Strozier</i>
414	Respiration and Meditation <i>Gopi Chand Gupta</i>
425	Microtubule Similarities between Single Cell Algae and Higher Organisms: A Reflection On Consciousness State <i>V. Pawani, Shruti Sinha, Swapnil Shrivastava</i>
434	Social, Emotional, Spiritual Learning (SESL) Test for Assessment of Consciousness in Primary Level Students <i>Gur Pyari Mehra, Nija Mehra, Divya Shikha Sethia</i>
443	Engineering towards Science of Consciousness <i>Amolak Prasad, Charan Adhar</i>
446	Towards the Development of a Protocol for Recording and Processing of Kirlian Images for a Possible Correlation with the Consciousness in Small-Dimension Inanimate Objects Exposed to Varied Physical Environments <i>Ashish Mani, Sahab Dass, Rohit Shrivastav, Vijay Malhotra</i>

POSTER SESSION II

March 3, 1400 – 1700 hours, Quantum-Nano Systems Centre Lawns

Cognitive Sciences and Consciousness, Dynamics of Consciousness, Foundations of Consciousness, Eastern Philosophy, Theories of Consciousness, Quantum Information and Consciousness

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| 4 | Consciousness as per Discourses of the Leaders of Radhasoami Faith
<i>Radhika Singh, Shanti Gupta</i> |
| 13 | Various Levels of Consciousness
<i>Anirudh Satsangi, Ankita Satsangi, Achraj Satsangi</i> |
| 28 | Development of Higher Consciousness and Social Media
<i>Ratan Saini, Nirat, Sangita Saini</i> |
| 31 | The Systems of Emancipation of Dayal
<i>Prateet Sinha, Neha S</i> |
| 36 | How Real is Perceived Freedom in Free Will ?
<i>Franz Klaus Jansen</i> |
| 49 | Creation and the Yoga of Divine Consciousness
<i>Dharampal Satsangi</i> |
| 60 | Ahimsa: A Gateway to Spiritual Consciousness?
<i>Smita Sahgal</i> |
| 66 | Rising towards Spiritual Consciousness- From the Akashic Field to the Quantum
Spiritual Force Field
<i>Chhavi Gupta</i> |
| 73 | Mistaking Limbs for Steps in the 8-Fold Yoga
<i>Robert Boyer, Park Hensley</i> |
| 76 | Investigation of Relationship between Consciousness and Personality
<i>Maharaj Kumari Kandikonda, Hans Raj Kandikonda</i> |
| 94 | An Enlightened Soul is Saviour of Many Souls
<i>Ashwini Satsangi, Gagandeep Nigam</i> |
| 102 | The Nature of Consciousness According to the Upanishads
<i>Durga Prasada Rao Chilakamarthi, Dharampal Satsangi</i> |
| 108 | Observer- Actor: Coach- Executive - Quantum Information in Business Decisions
<i>Swami Satchidanand Prasad Satyavolu, Sumati Prasad Satyavolu</i> |
| 112 | Pharmacodynamics and Translational Aspects of Consciousness
<i>Seema Bhat, Laxminarayan Bhat</i> |
| 141 | Consciousness from Physical to Spiritual in the Four Dramas of Param Guru
Sahabji Maharaj- a Comprehensive Study from the Literary-Social-Philosophical-
Spiritual Perspective
<i>Sugandha Khurana</i> |
| 146 | Stream of Consciousness from Individual to Society
<i>Sonam Mehta, Indira Sharma</i> |

151	Critical Analysis of Dretske's Tests for Perception and Awareness <i>Jaison A. Manjaly, Sumitava Mukherjee</i>
185	Progressive Incarnations <i>Reena Mathur</i>
191	Spiritual Consciousness as Determinant of Life Satisfaction and Level of Anxiety <i>Gur Pyari Prakash, Ranjeet Kaur Satsangi</i>
214	Is Our Universe a Quantum Consciousness Computer?: An Approach to Reveal the Universe, Evolution of Creation and the Ultimate Reality <i>Aashna Prakash, Rashmi Prakash, Shashi Prakash</i>
227	Sarbachan (Nazm): The First Text of the World Revealing the Mysteries of Supreme Consciousness <i>Prem Kali Sharma</i>
228	Contribution of Sant Kavya in Awakening <i>Gurpyari Satsangi, Meenu Singh, Sukhveer Kaur</i>
251	Consciousness of the World and the World of Consciousness <i>Nirat S, Sangita Saini, Ratan Saini</i>
260	Does Day and Night Shift Influence Positive and Negative Tendencies of Human Mind? <i>Archana Satsangi, Ritu Sharma</i>
261	God's Architecture: A Comparative Representation of Creational and Physical Systems with Special Emphasis on Change Management and Control Mechanisms <i>Anhad Kashyap</i>
269	Unpicking Consciousness: Break Away from a Human-Only View <i>Carl Adams</i>
270	Artificial Consciousness: Autonomics, Memes and Killer Kangaroos <i>Carl Adams</i>
274	Unified Theory on Cosmic Consciousness, Life, and The Human Race <i>Om Verma</i>
289	Traversing the Path of Love: Spiritual Consciousness and Kabir <i>Renu Josan, Prem Josan</i>
295	The Realization - Aim of Human Life <i>P Singh</i>
316	Development of Quantum Neural Networks to Explain Consciousness <i>Drishti Malhotra and Daya Malhotra</i>
349	Imaginal Processes & Cognitive Distortions: An Empirical Study on Inner Experience <i>Navya Pande, Sandhya Gupta</i>
352	A Hypothesis for Consciousness <i>Hasmukh K. Tank</i>
422	D.E.I. Education Policy - A Step Towards Consciousness <i>Payal Mathur, Anubhav Bhatnagar, Vaibhav Bhatnagar and Rashmi Bhatnagar</i>
423	Quantum Leap in Self-Consciousness <i>Swapnil Shrivastava, V. Pawani, Shruti Sinha</i>
424	Understanding Consciousness <i>Rajinder Swarup</i>

POSTER SESSION III

March 4, 0800 – 1100 hours, Quantum-Nano Systems Centre Lawns

Group Techniques, Language and Consciousness, Physics and Mathematics of Consciousness, Religion and Meditation, Consciousness and Social Sciences, Science of Spirituality

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| 2 | Paravidya and Management: Antecedents and Consequences (A Select Study of Radhasoami Faith and Dayalbagh Agricultural Operations)
<i>Shanti Swarup Gupta, Sanjeev Swami, P Srirammurti</i> |
| 24 | Emancipation of the Stone
<i>Gazal Mathur</i> |
| 30 | Meditative stages, Hypnosis and Self-Hypnosis a means for Entering our Inner Experiences
<i>Anirudh Kumar Satsangi, Paola Brugnoli, Ankita Satsangi</i> |
| 95 | Money Modulates Attribution of Agency
<i>Neeraj Kumar, Sumitava Mukherjee, Jaison Manjaly</i> |
| 104 | The Matrix of Consciousness: the Spiritual Domains vis-à-vis Magnetic Domains of Weiss
<i>Surat Kumar, Kavita Kumar, Bhakti Kumar</i> |
| 111 | Spiritual Energy Hierarchization, Detection and Utilization: An Evolution of Homo spiritus
<i>Richa Satsangi, Maneesh Gaurav, Rashtra Gaurav</i> |
| 128 | Information Integration in Swarm-Bots and Machine Consciousness: A System of Systems
<i>Anurag Mayank, Dhruv Bhandari, Agam Bhamra, Akshar Srivastava, Sandeep Paul</i> |
| 133 | Using Religion Hand in Hand with Science to Perceive Reality
<i>Shikha Verma, Asha Juneja</i> |
| 138 | Peace, Spirituality and Consciousness: An Integrated Approach
<i>Savita Srivastava</i> |
| 145 | Perceived Transformational Leadership Effectiveness in Relation to Level of Consciousness: A Co-relational Analysis
<i>Vaibhav Chauhan, Sadhna Sharma, Nandita Satsangee</i> |
| 153 | Memory and Consciousness in Literature (with Special Reference to Douglass' Narrative of the Life of Frederick Douglass and Toni Morrison's Beloved)
<i>Prem Kumari Srivastava, Umang Srivastava</i> |
| 160 | The Partnership between Organizational Consciousness and Organizational Culture A Case Study from the Indian Power Sector
<i>Prem Prakash Srivastava, Umang Srivastava</i> |
| 164 | Emancipation and Peace---Sure Means to Attain the Supreme Reality with reference to The Waste Land and The Mahabharata.
<i>Namita Bhatia, Soami Das Bhatia</i> |
| 166 | Mathematical Analysis of the Words, Sounds and Lights of Spiritual Movements
<i>Prakash Sahni, Pooja Sahni</i> |

175	Intersecting Universal Consciousness with Experiences, Experiments and Intuitive Consciousness with Special Reference to the Discovery of God particles and Universal Consciousness <i>Soam Prakash</i>
184	Meditation, Quantum Physics, Consciousness and Oneness <i>Sanjay Srivastava, Sandeep Kumar</i>
193	Managing Change through Conscious Leadership <i>Mahesh Ohry, Deepak Ohry</i>
195	Intuition and High Levels of Spiritual Consciousness <i>Sumiran Satsangi, Shipra Satsangi</i>
211	Visualizing a Conscious Economic System to Realize a Better World Order (Need for a Paradigm Shift from Materialism – Ethics - Spirituality) <i>Jyoti Gogia, Deepak Gogia</i>
229	Professional and Ethical Consciousness among Organizational Development Professionals <i>Sanjeev Bhatnagar</i>
230	Consciously Increasing Consciousness and thereby Happiness: The Integrated, Unified and Systemic Model of Consciousness applied in Organizational Context <i>Vikas Rai Bhatnagar, Mahendra Singhi, Sheena Bhatnagar, Rajen. K Gupta</i>
244	An Analogy for Consciousness and Its Elevation <i>Pradeep Kumar Mathur, Vasanta Mathur</i>
246	The Use of Quantum Formalism in Cognition: A Study of Prayer and Intuitive Decision Making in Managerial Situations <i>Sumita Srivastava, Anjul Dayal, Drishti Mehra</i>
252	Sowing the Seeds of Consciousness <i>Sangita Saini, Nirat S, Ratan Saini</i>
253	From the Organic (Flowing, Glowing, Growing) Mirror, The “White” Crow, Organic Clocks and Locks and other Stories to Godel, Turing ,Cantor and Sieperenski , The Eternal Golden “Quatrain” <i>Sundaram Ramchandran</i>
257	Consciousness <i>Jatindra Nath Mohanty</i>
288	Convergence Of World Religions? <i>Saran Bhatnagar, Jyoti Satsangi, Naman Swaroop, Sugandha Mittal</i>
292	Music, Neuroplasticity and Microtubules <i>Raag Saluja</i>
293	Brain and its Mystic Realm: Science towards Intuitive Consciousness <i>Neh Satsangi, Queena Satsangi</i>
302	Intuition - Convergence with Spiritual Consciousness for Better Worldliness <i>Arti Prasad, Indrajit Das</i>
304	Qigong Dandao Meditation and Visual Attention <i>Ming-Hui Tsai, Wei-Lun Chou</i>

309	Non-Manifold Topologies on Lorentz Manifold <i>Gunjan Agrawal, Sampada Shrivastava, Nisha Godani</i>
313	Enhancing Emotional Balance through Consciousness in Management Professionals <i>A.Vasdev Raju, A.Charan Kumari</i>
348	Computational Models of Consciousness <i>Prem Sewak Sudhish</i>
358	Binocular Rivalry- A Psychophysical Study and Analysis in Quantum Mechanics <i>Sheena Sharna, Satendra Gupta, CM Markan</i>
366	Comparative Study of Meditating versus Non-Meditating Pregnant Women on Delivery <i>Dayalpyari Goel, Gurr Devi Srivastava</i>
370	Consciousness and Medical Therapies <i>Pallavi Satsangi Sharma</i>
377	Self-Consciousness and Cosmic-Consciousness with Reference to Dante's Divine Comedy <i>Namita Bhatia, Soami Das Bhatia</i>
416	Conscious Co-Creation : Evolution of Consciousness or Creating your Own Future? <i>Suresh Idnani, Teena Idnani</i>



Abstracts

TSC 2013 : VISION TALK

TOWARDS INTEGRATING ARTS

(FIRST-PERSON SPIRITUAL-COGNITIVE-MATERIAL PHENOMENOLOGY)
AND SCIENCE

(THIRD-PERSON NEURO-PHYSICAL ENVIRONMENTAL -COGNITIVE CORRELATES)
OF CONSCIOUSNESS :

THE DAYALBAGH VISION

PROF. PREM SARAN SATSANGI

Chairman, Advisory Committee on Education
Dayalbagh Educational Institutions
Dayalbagh, Agra, INDIA

This talk presents apt aphorisms in Sanskrit together with their English translation to drive home the essence of the highest form of spiritual consciousness.

अथ प्रेमसूत्रं व्याख्यास्यामः । सच्चिदानन्दस्वरूपम् चैतन्यम् ।।

(परम गुरु महाराज साहब)

परम सत्चित् प्रेमानन्द प्रकाश शब्द अनहद नाद स्वरूपम् ।
राधास्वामी ध्वन्यात्मक शब्द धुन आदि अनादि चैतन्यम् ।
राधास्वामी सर्वकारणं अतिविख्यातं मूलपरमतत्त्वं भजे ।।

We shall now explicate the Aphorisms of Love

Consciousness is of the nature of Truth, Intelligence and Bliss

(Param Guru Maharaj Sahab)

Radhasoami is of the form of Supreme Truth, Intelligence, Love, Bliss, Refulgence, the Original Mystic Name, the Resonating Unstruck Sound, the Beginning of All but Beginningless, Primeval Consciousness:

I adore 'Radhasoami', the Original Cause of everything and the Extremely (Most) Well known Primal Supreme (Truth) Essence.

It further highlights the Proclamation at the Founding of the Radhasoami faith on the Basant Panchami Day in January, 1861 (more than 152 years ago) which has been the guiding light of the Dayalbagh Vision of Consciousness ever since. It traces back our approach to integrating inner experience with scientific methodology to my first public discourse [Satsangi P.S. (2003), "Reality and Truth vis-à-vis Widson via Aparavidya (natural Science) and Paravidya (Phenomenology : Experiential Science)" at the International Conference of Association of Asia-Pacific Operational Research Societies at Hotel Grand International, New Delhi on 8.12.2003].

The Vision Talk acknowledges considerable rapport and support derived from the seminal work of Price D. and Barrell J., Inner Experience and Neuroscience, MIT Press 2012.

However, there is a significant way in which our approach contrasts with that of Price and Barrell. While we fully endorse Price and Barrell (2012) in their use of four fold paradigms for integrating inner experience with scientific methodology and concede their assertion that questions, not hypotheses may guide the first three stages of observing, repeating and understanding from the first person perspective of co-investigators and it is not necessary to frame the hypotheses in advance but it is through first person account of phenomenology that these hypothesis may be later formulated and tested and the last stage is when the scientific methodology comes in using psychometric methods and use quantitative physical psychophysics.

There is no gain saying the fact that much more useful insights can be invoked if hypotheses are inspired and anticipated right from the early stages based on rich and thorough record of inner experience in Eastern Philosophy with particular reference to Radhasoami Faith (e.g. M. Sahab, "Discourses on Radhasoami Faith", First Edition, 1960).

I want to emphasize that we use one-to-one correspondence in preparing our Spiritual System Theory Framework with the Physical System Theory. Physical System Theory Framework (Koenig H.E., Tokad Y. and Kesavan H.K., 1966) as a scientific methodology has its fundamental axiom (together with component postulate, system interconnection postulate). Similarly, the proposed Spiritual System Theory Framework (Satsangi P.S., 2006) firmly rests on its comparable Fundamental Axiom of Spiritual Consciousness and comparable postulates (viz. (1) Macrocosm-Microcosm Consciousness Interaction Postulate and (2) Universal Consciousness Realization Postulate) and in any scientific methodology, it is the verification of the theoretical model predictions which would decide whether the proposed theory holds or not.

Accordingly, why grope in the dark in framing hypotheses. Why not save precious time and advance the Science of Consciousness by leaps and bounds. Not only we have retained our continuing distinctive hallmark (positive feature) of recording indirect scientific measurements of spiritual consciousness (Satsangi P.S. and Sahni V., NSC 2007, NSC 2008, TSC 2012) of Dayalbagh Community as neuro-physical-environmental correlates through relevant, repeatable, non-intrusive scientific experiments and extended it very considerably by lately utilizing Superconducting Quantum Interference Devices (SQUID) as a very sensitive magnetometer to record MEG (Magneto-Encephelo-Gram) as neuro-correlates in a magnetically shielded chamber during individual meditation and group meditation-cum-prayer sessions since last work.

Furthermore, inspired by recent developments (Gennaro R.J. : The Consciousness Paradox, MIT Press, 2012), I have proposed HOT-Consciousness : SCANE Correaltes, where HOT-consciousness stands not for Gennaro's Higher Order Thought, but Hierarchical Order Theory of Consciousness and SCANE Correlates standing for Spiritual-Cognitive And Neural-Environmental Correlates. The Vision Talk is intended to elucidate it with somewhat encouraging evidences of integrating spiritual phenomenology of consciousness with scientific methodology of hypothesis-testing and verification in a preliminary sense.

References

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INAUGURAL TALK

■ INNER EXPERIENCE AND NEUROSCIENCE: MERGING BOTH PERSPECTIVES

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*(and Donald D. Price)

We have proposed a well-structured program for a science of human experience (and consciousness) and its integration with the rest of the sciences, including psychology and neuroscience (Price and Barrell, 2012). It begins with a structured exploration of experience that avoids presuppositions and theoretical biases yet incorporates the usual hypothetico-deductive scientific method. This *experiential approach and method* utilizes practices from both *East* and *West* which include meditative traditions, phenomenology, and descriptive experience sampling techniques.

Once a type of experience is selected for study under either controlled or naturalistic conditions, the participants who also can be considered co-observers, are trained to use *present-oriented awareness* to fulfill the ideal in science of being an *objective observer*. They are further trained to describe (report) brief episodes of a type of experience, such as a kind of pain, state of consciousness, or emotion (e.g., performance anxiety). Brief episodes of experiences (lasting a few seconds) are reported by writing first-person accounts soon after the experiences take place, without interpreting, explaining, or using stories, metaphors, or forms of poetic reporting. The *first-person descriptive accounts* are subjected to qualitative analysis to identify the common factors for a type of experience and then further analyzed to identify essential factors. The co-observers must reach complete consensus on the *common essential factors* that make up an experience, such as a type of emotion (anxiety) or a state of consciousness (hypnotic state). Statements that are about which factors are necessary and taken together sufficient for a type of experience then constitute definitional hypotheses about a type of experience while statements about how they interact constitute functional hypotheses.

These hypotheses, which are derived from an experiential first-person approach and method, can then be tested in groups of participants unfamiliar with the hypotheses but trained in *psychophysical scaling methods*. Alternatively, both qualitative and quantitative methods can be combined for the same group of observers. Both approaches and multiple experiments can be combined to understand the nature of types of conscious experiences. They also can be interfaced with *neuroscience studies*, such as neuroimaging studies of hypnosis and other background states of consciousness.

This integrated approach and method of discovery has been used to investigate and understand basic emotions, motivation, choice experiences, pain and suffering, and placebo responses. Even issues related to such difficult subjects as volition, habituation, time perception and complex negative emotions including jealousy and greed can be explored and understood. Overall, an experiential approach and method could provide understandings that are deeply personal, widely public and relevant to the significant human issues and problems in everyday life.

WORKSHOPS

■ CONSCIOUSNESS IN THE UNIVERSE – REVIEW OF THE ‘ORCH OR’ THEORY

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Mainstream approaches to the science of consciousness based on complex synaptic computation among brain neurons fail to account for phenomenal experience, binding, memory, synchrony, and free will, leading to a description of consciousness as an epiphenomenal illusion, lacking testable predictions. A complementary approach based on intra-neuronal information processing, e.g. classical and quantum computation in cytoskeletal microtubules, offers potential solutions and testable predictions. In this workshop I will review evidence and theory regarding consciousness and microtubules, and show how a finer scale of intra-neuronal processing, particularly quantum computing in dendritic-somatic microtubules, can underlie and rescue neuronal-based theories. The Penrose-Hameroff theory of ‘orchestrated objective reduction’ (‘Orch OR’) suggests consciousness involves such quantum activities in brain microtubules connected with self-organizing processes in the fine scale structure of the universe, fundamental spacetime geometry. According to Orch OR, consciousness is intrinsic to the universe, and consistent with Eastern philosophy.

1. Neuronal microtubules

- a. Unique dendritic-somatic microtubules, integration, deviation from Hodgkin-Huxley
- b. Memory – Encoding of synaptic information in microtubules by CaMKII phosphorylation
- c. Alzheimer’s disease – microtubule instability, tau encoding, zinc
- d. Anesthetic binding to tubulin - anesthesia, post-operative cognitive dysfunction

2. Quantum physics in the brain

- a. Penrose-Hameroff ‘Orch OR’ model – quantum computation in microtubules
- b. Tubulin dipole bits, qubits, quantum channels
- c. Topological quantum computing, Feynman quantum chessboard
- d. Backward time effects, Libet, causality and real-time free will
- e. Evidence from quantum biology, A. Bandyopadhyay

3. Brain-level organization

- a. Gap junctions and moving zones of synchrony – the ‘Conscious pilot’ model
- b. Scale-invariant dynamics – neuronal avalanches, coma and anesthesia, psychedelics
- c. Quantum cognition – Bruza, Pothos/Bussemeyer/Aerts/Gabora

4. Conclusion

- a. Reply to critics – Grush / Churchland, Tegmark, Koch / Hepp, McKemmish / Reimers, Baars / Edelman
- b. Microtubules and consciousness in evolution
- c. Transcranial ultrasound – therapy aimed at microtubules
- d. Eastern philosophy, and consciousness in the universe
- e. Discussion, Q&A

■ HEALING, TRANSFORMATION AND HIGHER CONSCIOUSNESS

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Are we in the midst of a major paradigm shift in science?

Is there an ultimate reality?

Does consciousness conceive, govern, construct and become the physical universe?

Is the universe becoming self aware in the human nervous system?

Is the next stage of human development conscious evolution?

Do we have the ability to influence the future evolution of the cosmos?

How does our understanding of consciousness as pure potentiality enhance our capacity for intuition, creativity, conscious choice making, healing, and the awakening of dormant potentials such as non local communication and non local sensory experience?

How does our understanding of consciousness also enhance our capacity for total well being (physical, emotional, spiritual, social, community, financial and ecological)?

Deepak will address all these questions as well as practical ways to experience higher consciousness, transformation and healing.

■ THE SELF IN SCIENCE AND INDIAN MONISTIC SCHOOLS

MENAS KAFATOS

Fletcher Jones Endowed Professor of Computational Physics

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United States of America

Every human being, sooner or later, wonders about his/her purpose of life and how the individual fits in the general scheme of things, what is the right way to live, how to search for the right values and meanings of existence. These are ancient questions, still very relevant today, affecting every single human being in today's society. What is this sense of identity, or individuality, that has been with us from the day we were born until we pass on, what is this "self"? This is a deep question which philosophy has tried to address for at least 2,000 years. In the case of us, humans, the individual self is a conscious entity, with self-awareness and objectified awareness. Do other species possess a sense of self, like humans do, is consciousness a characteristic of life in general? Does life (and consciousness) exist throughout the universe?

In a more general sense, what is consciousness itself, how can one define it, what are its characteristics, and other such related questions, are at the forefront of both scientific and metaphysical inquiry. Although one would expect that consciousness should be subject to scientific investigation, in truth little progress has been made on that, last frontier, of science. We know more about galaxies billions of light years away than we know what a thought is, how it is produced, its connection with the neuronal hardware.

Perhaps some progress can be made by concentrating on the role of observation in modern physics, as this would tie to the way science is conducted and specifically the most advanced frontier of science, quantum physics. One can then ask, what is the relationship between observation and the self, between the observer and the observed? However, this is not as simple as it might at first appear: The scientific paradigm that has worked for several centuries, classical Newtonian physics, and even though shown to be limited still prevails as the way science is practiced, says nothing about the act of observation or for that matter the observer. It is totally agnostic, as the implicit metaphysical assumption of classical physics is that there is an existing external, physical reality, independent of observations. But this is nothing more than an ontological presumption, no one has proven that indeed this is the way things are! As such, the observer, and by implication the conscious self, are irrelevant to most of the conduct of science and are delegated to a secondary, at best, role. As classical physics had, and still does, such a profound influence on scientific inquiry, one should not wonder that progress has been slow to try to address the issues of consciousness and self. However, we quickly note that if we are to adopt and follow the classical scientific world view, then the purpose of existence, the meaning of life, the individual self, the act of observation, free will, to mention a few, all become hollow and imaginary concepts, with no foundational existence. The only "things" that exist are space, time, objects, forces, energy, and other such familiar physics entities, all obeying immutable laws subject to the rigors of mathematics. The universe of classical science, although in some sense ideal, is also a rather inert and barren landscape, with no place for humanity and everything that is near and dear to all human beings.

With the progress brought about through the development of quantum theory, the act of observation has taken a central role. In the words of John A. Wheeler, the universe is a participatory universe, "no phenomenon is a phenomenon until it is observed". In the Copenhagen Interpretation, developed by Niels Bohr, Werner Heisenberg, Wolfgang Pauli, Max Born, followed by Richard Feynman and others, and its highest form achieved through

the work of John von Neumann, observation plays a central role. In fact, Earl Walker claims that in order to understand physics, we have to understand consciousness. In several works, my co-workers and I have suggested that quantum physics, through the central role of the observer element, is opening the door to understanding consciousness, to understanding the *Conscious Universe*.

In cognitive science, psychology and related fields, the self, the observer and consciousness are, often, interchangeably used, which can lead to confusion. We claim one should take great care to define terms as well as one can, and follow consistent clarity. Although there are complementary relationships tying them together, they are not the same. In fact, in quantum theory, there is a complementary relationship between the observer and the observed system. In cognitive science as is being developed today, neuroscientists, psychologists, and physicists, have placed little emphasis on the observer, and have primarily tied consciousness to objects within consciousness. Russell Hebert and I propose that consciousness cannot be understood fully by looking exclusively at objects within consciousness and one has to address the role of the observer. Contemplative neuroscience and the vast field of meditation practices, imply the same. We make the case that the de-objectified observer of human consciousness is the same as the observer of quantum physics. Athanassios A. Nassikas and I have developed the concept of *dimensionless*, as a “place” where consciousness resides, which cannot be expressed logically, in all space and all time (past and future). And, therefore, as we note, the concept of *space-time quantum entanglement* is identical with the concept of *space-time non-locality* originally proposed by Kafatos. This is perhaps a reasonable way to proceed, from science to metaphysics and monism. The individual self would then be the sense of awareness by the observer observing herself. In putting it this way, it opens the door to utilize the tools of quantum theory, particularly as developed by von Neumann, in order to address the nature of the self.

There is, however, a huge challenge ahead: By definition, de-objectified consciousness *cannot* be studied as an object, which would imply that consciousness is outside the realm of science. There is a way out: Rather than studying the nature of consciousness as an object, one may study the *properties* assigned to conscious processes. This would still allow a scientific approach. In fact, the properties can be tied to foundational principles, which should be part of a mathematical formulation. These principles are found to be universal and apply at all scales, in fact they apply *outside* space and time as well as *inside*. Guided by quantum theory, we find that complementarity, non-locality, entanglement, quantization, contextuality, and even sufficient reason, can all be considered as principles applying not just to the so-called physical world, but to the mental and living worlds as well. Here the role of *qualia* becomes paramount. Deepak Chopra, Rudy Tanzi and I are exploring a new qualia science. The universal principles are the hallmarks of qualia, how they operate as singular moments of subjective experience.

The final step is to realize the universality of principles associated with consciousness, i.e. to realize that the individual self and its role as the observer, are much more universal than the individual human condition. In parallel to these modern attempts, what perennial philosophies have taught for thousands of years, the sages of Vedanta, Shankara etc., the sages of Shaivism, Vasugupta, Abhinavagupta, Utpaladeva, Somananda, Ksemaraja, etc., and in ancient Greece, Socrates, Plato, Pythagoras, and all the great thinkers and philosophers, all lead to the basic, all encompassing, foundation of the Universe, the Self. The great teachers taught and practiced, that the individual self is the same as the universal Self. We will examine some of the ancient *sutras*. Perhaps then the entire universe is nothing more than acts of observation. The creative process would then be identical to

the observing process. The Self would be the ultimate Witness Consciousness. And the act of creation would be a conscious act of observation. In this vision, the Universe is participatory, consisting of countless acts of observation, forming a web of entangled processes at all levels. In this new vision of the universe, instead of declaring as Descartes “I think, therefore I exist”, we would declare “We observe, therefore everything exists”.

EASTERN PHILOSOPHY FORUM

■ HIGHER STATES : THE NEUROPHYSIOLOGY OF ENLIGHTENMENT

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Since ancient times, the cherished goal of Yoga and Yogic meditation has been the attainment of *Moksha*—Enlightenment. In modern times, the scientific research community has focused on the more pedestrian but practical goals of improved physical and mental wellbeing.

However, recent scientific studies on long-term meditators are starting to report a fascinating and potentially important “side benefit” of sustained yogic practice: **higher states of consciousness**. These are states of consciousness beyond waking, dreaming and deep sleep, which bring a completely transformed experience of the world, along with greatly expanded mental and physical capabilities.

These published findings provide key empirical support for the ancient Yogic hypothesis of higher states of consciousness. They impact substantially our basic understanding of the nature of consciousness, the limits of human potential, and the practical possibility of living Enlightenment on a permanent basis. They also reveal the fundamental difference between “consciousness”—the abstract field of pure subjectivity—and the “content” of mental experience: sensation, mind, and emotion.

INVITED TALKS

■ TEN FUNDAMENTALS OF A SINGLE BRAIN MICROTUBULE: HOW BIOSYSTEMS PLAY MUSIC WITH THE OCTAVE BANDS FOR THE LAST 3 BILLION YEARS

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Composing music requires seven basic tunes, for Indians, seven tunes come from the sounds of seven animals, however, in the biosystems, where microtubule is the string, musical notes are played with octave frequencies and their large number of harmonics. In conventional musical devices, we harp on the string to play the music, but here, we change the length of the string to play the music. There are basically ten fundamental features which makes microtubule a unique musical string. 1. Microtubule is a ferroelectric material, hence it is pyroelectric and piezoelectric. 2. Microtubule carries out wireless communication with another neighbor 10 micrometers apart. 3. Microtubule is a fusion of eight tuning forks. 4. Microtubule alleviates thermal noise automatically. 5. Dynamic instability was programmed 3 billion years before trees, animals, protista and fungi got separated in due course of evolution. 6. Dynamic instability is the language of the living cell. 7. Microtubule belongs to a unique class of condensates, protein forms unique resonance circuits with the evolutionary drug molecules. 8. Microtubule shows loss-less memory switching properties. 9. Water channel controls the electronic property of a single microtubule. 10. Soliton propagation along the brain neuron extracted microtubule. We can summarize the above ten remarkable findings on microtubule as follows: the ferroelectric property is the key microtubule is a tuning fork piezoelectric oscillators and works as an antenna and receiver. All the properties of single brain microtubule remain constant with length but only the resonance property changes. Therefore, it creates a language for the living cells. The synchronized communication among microtubules are responsible for unique wireless communications. We have seen that with synchrony microtubule from different species exhibit unique similarity and cooperative relationships. Obviously, these were programmed long back before the evolution started, the soliton production and propagation were detected in the microtubule under thermal and electrical vibrations, and we also imaged them under the atomic scale microscopy. Therefore, eventually, it helps in noise management as microtubule breathes heat to pump them outside the microtubule. This unique management helps microtubule to keep its conductivity independent of temperature.

■ **“MAN CANNOT BEAR TOO MUCH REALITY” (T.S. ELIOT):
EXPERIENCE, KNOWLEDGE AND REPRESENTATION IN
BRITISH LITERATURE”**

ANNA-MARGARETHA HORATSCHEK

Dean of the English Department

Chair for English Literature

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How can spiritual experiences, which per definition transcend the limits of verbal language and rational systematization, be represented in language? Literature, as a privileged site for cultural self-reflection, has imaginatively negotiated this problem throughout history. T.S. Eliot's title quote exhibits the modernist conviction that language protects and at the same time prevents human consciousness from the experience of an – assumed – true reality. Only in epiphanies may it appear for a fleeting moment, but there is no way to represent it adequately. Yet by writing about the impossibility of rendering 'authentic experience', T.S. Eliot simultaneously evokes the very realm he explicitly marks as unrepresentable. Postmodern literature radicalizes the epistemological skepticism of Modernism and negotiates the philosophical thesis that even the idea of an experience 'beyond' language is the product of culturally dominant ways of thought, established from antiquity and depending on binary oppositions, presentism (Derrida's deconstructivism) and historically specific discursive codings (Foucault's discourse analysis). These literary discussions regarding the precedence of ontological reality (essentialism, transcendence, spiritualism) or cultural production (constructivism, immanence, secularism), the status of individual experience as a way to knowledge, and aesthetic strategies to transcend the 'prison house of language' (Henry James) will form the central topics of my talk.

I shall present a *tour d'horizon* of British Literature from the Early Modern Period to the present and focus on paradigm shifts from an ontological to a cultural(ist) perspective concerning the relation between epiphanic experiences, (verbal and scientific) knowledge and (aesthetic) representation. How do the historically specific views affect related concepts like 'soul', 'self', 'knowledge', and 'truth', and how do the various approaches in British Literary History comment on the ultimate aim of the conference to move 'towards a science of consciousness'?

■ DYNAMIC BRAIN STATES AND CONSCIOUSNESS

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According to Tononi, the qualitative aspect of subjective experience arises from the choice from a large repertoire of possible qualities. It is further postulated that each experiential event is associated with a distinct brain state and that the ongoing stream of consciousness is formed by the rapid and orderly succession of these states. Important remaining questions include at what functional organization and temporal scale these brain states exist and how they may be quantified. Recent functional magnetic resonance imaging (fMRI) investigations reveal that in the task-free resting state, functional connectivity patterns of the brain change dynamically on the time scale of seconds. Measurements of electroencephalographic activity reveal microstates at the time scale of 100 ms. Local neuronal groups form transient functional clusters called avalanches that last for milliseconds. Dendritic field potentials form dynamic patterns with submillisecond precision. None of these patterns ever repeat in exactly the same form as each is modified by its own history, leading to an inexhaustible repertoire of states in time. But the dynamics of state transitions can be different in various global states of wakefulness, sleep, attention, vigilance or drug effects.

A potentially fruitful scientific approach to better understand the minimal necessary neural functions that support the state of consciousness is to manipulate the state of consciousness. Anesthetic drugs are unique tools to safely and reversibly alter the state of consciousness with great precision. We ask, how is the dynamics of brain states influenced by general anesthetics at a dose that suppress consciousness? Also, does brain state dynamics recover when subjects emerge to consciousness from anesthesia? To answer these questions, we performed investigations using fMRI and intracerebral recordings of electrophysiological signals at three different spatial and temporal scales.

■ SETTING THE AGENDA FOR A SCIENCE OF INFORMATION

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Information is connected / related at the local level with Time Space Energy and Matter and at nonlocal level with Mind, Self, Life-principle and Consciousness. Therefore, developing a science of information becomes compelling for extension of present science in the deeper (spiritual) realm and to connect spiritual science with what all have been available in present science.

The present paper takes a radical view of information by taking a position that information has an independent existence beyond Planck's scale of nature. Its size is smaller than what can be measured in Planck's scale and then sets the agenda for developing a science of information. The hypothetical relation between information and mind with Time Space and Energy has been stated. A probable structure of information in inactive and active stage has been suggested. It is viewed that information is carried by the quantum particle/ wave to produce quantum puzzles and paradoxes. Information loss during passage of information through cascading nest of nature-consciousness has been cited. A distinction between information-entanglement and quantum entanglement has been made. That information has a mechanics of its own has been emphasized. Information-gene relationship, information-memes relationship and information-self relationship have been discussed. Other possible frontiers in developing a science of information have been highlighted. Finally, *mantra* has been visualized as information on the Divine.

The proposition is conceptual and has been developed on the basis of imagination, speculation and intuition. The motivation to write the paper originates from envisaging a probable bridge between the realm of present science and the realm of spirituality by means of developing a science of information.

■ OBJECTS, BOUNDARIES AND IDENTITY: WHAT QUANTUM THEORY AND NEUROSCIENCE TELL US ABOUT OBSERVATION

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Our silently-verbalized thoughts, our statements to each other, our written records are all experienced as classical information: finite symbol strings like “it’s warm out today” or “ $x = 5$.” What classical information is and where it comes from is the deepest question in the foundations of physics, and has been so for over 80 years. This question is traditionally called “the measurement problem”; it is now also called the problem of the “emergence of classicality” or the problem of what “local operations, classical communication” means as a computational protocol.

This talk confronts the question of where classical information comes from with another: how do observers identify the systems that they are observing? The first part examines the ubiquitous assumption that the macroscopic systems routinely identified by human observers – laboratory apparatus, other people, tables and chairs – can be treated as objectively given by quantum dynamics via some physical process of “emergence.” It shows that decoherence theory, the leading candidate for a physical theory of the emergence of classicality, cannot produce objective classicality, and that popular non-ontic positions such as quantum Bayesianism cannot be made coherent without assuming objective classicality a priori. Hence the origin and even the meaning of classical information remain open questions.

Classical information is produced by quantum entanglement, but in a way that does not allow for observer-independent objectivity. Obtaining, recording or reporting classical information within a quantum world requires the presence of “social mirrors” (C. Whitehead, 2001, *J. Cons Studies* 8(4) 3-36) – multiple observers who are able to communicate about the identification of the systems, including each other, that are being observed. Expressing this dependence of observation on multiple, communicating observers requires extending quantum theory with a language capable of explicitly representing semantic relationships, such as the languages of virtual machines (i.e. of algorithm execution) or of category theory.

The second part of the talk briefly examines an extension of Tononi’s theory of consciousness as information integration capability (G. Tononi, 2008, *Biol. Bull.* 215, 216-242) to include object identification by observers. It points out that the brain is constructed so as not to require that systems be given, and hence so as not to require objective classical information. It concludes that biological systems in general – including macromolecules – can productively be viewed as *de novo* creators of classical information and hence as “consciousness machines.”

■ QUESTIONS FOR CONSCIOUSNESS RESEARCH – CAN SYSTEMS THEORY HELP?

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The concept of consciousness has been explored largely in terms of human consciousness. The extension of the concept of consciousness to non-human consciousness and, potentially, to consciousness in other forms, raises a number of questions for consciousness research. Organising principles such as system theory may be able to help understand the phenomenon of consciousness, but broader concepts such as from quantum theory, fundamental space-time geometry and, potentially, string-theoretic parallel universes are needed. The paper addresses issues such as: can systems theory contribute to the analysis of such phenomena? What other concepts must be adapted or developed to understand consciousness as a system?

■ WHAT DO WE KNOW ABOUT MICROTUBULES TODAY THAT WE DID NOT KNOW 15 YEARS AGO AND WHY IS IT IMPORTANT?

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Microtubules, cylindrical protein organelles found in all eukaryotes, are critically involved in a variety of cellular processes including motility, transport and mitosis. They have also been implicated in signaling, memory and communication processes in neurons. Their component protein, tubulin, is composed of two polypeptides, designated α and β . In addition to α and β tubulin, cells require the related γ tubulin for nucleation. An enigmatic feature of tubulin is its heterogeneity. Not only are α and β tubulin each encoded by up to six different genes, but the protein can also be post-translationally modified in many ways. In 1997 in a major advance in the field, the three-dimensional structure of bovine brain tubulin has been determined by electron crystallography by the Downing group at Berkeley. We have been studying the tubulin structure and its properties extensively using computer modeling and identified global structural similarity traits along with subtle differences between isotypes of tubulin in their electric charges, volumes, surface areas and morphology, dipole moments and dipole vector orientations. These properties influence the functional characteristics of each individual tubulin as well as microtubule stability, assembly kinetics and conductive properties, as is known from experimental studies. The regularity of the obtained results indicates correlation between structure and function. Of particular importance was to find differences in the binding sites for various chemotherapeutic agents such as taxanes and vinca alkaloids in order to design isotype-specific variants of these anti-mitotic drugs. This has led to rational drug design with great potential for future applications in the clinic. We also demonstrate the importance of electrostatics in the formation of the microtubule lattice for pattern encoding and for conduction properties. Finally, recent results indicate at a molecular level how microtubules play a key role in anesthesia, memory formation and pathological changes in cancer as well as neurological diseases (Alzheimer's, Parkinson's, TBI and Huntington's). In summary, over the past 15 years we have created the foundation for quantitative design of macromolecular structures based on tubulin isoforms with potential applications in nanotechnology and molecular medicine.

■ IS CONSCIOUSNESS THE UNIFIED FIELD? A FIELD THEORIST'S PERSPECTIVE

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Progress in theoretical physics during the past decade has led to a progressively more unified understanding of the laws of nature, culminating in the recent discovery of completely unified field theories based on the superstring. These theories identify a single universal, unified field at the basis of all forms and phenomena in the universe.

At the same time, cutting-edge research in the field of neuroscience has revealed the existence of a 'unified field of consciousness'—a fourth major state of human consciousness, which is physiologically and subjectively distinct from waking, dreaming and deep sleep. In this meditative state, a.k.a. *Samadhi*, the threefold structure of waking experience—the observer, the observed and the process of observation—are united in one indivisible wholeness of *pure consciousness*.

These parallel discoveries of a unified field of physics and a unified field of consciousness raise fundamental questions concerning the relationship between the two. We present compelling theoretical and experimental evidence that the unified field of physics and the unified field of consciousness are *identical*—i.e., that during the meditative state, human awareness directly experiences the unified field at the foundation of the universe.

We show that the proposed identity between pure consciousness and the unified field may be required to account for experimentally observed 'field effects of consciousness.' We present the published results of a *National Demonstration Project*—in which 4,000 advanced meditators markedly reduced violent crime in Washington, DC.

We briefly discuss mechanisms from quantum mechanics, quantum field theory, and superstring theory that could explain the proposed link between human neurophysiology and the unified field of physics.

■ **A LIGHT ON 'BHANWAR GUFA' BASED ON THE TRUTH :
'THE MICROCOSM (AHAM OR PINDA) AND THE MACROCOSM
(MAHAT OR BRAHMANDA) ARE BUILT ON THE SAME PLAN'**

JOY SEN

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The paper brings to light an extremely important area of realization proposed by the tradition of Saints (Sants) in the Western and Eastern traditions. Natural systems like a bee-hive or an ant-hill have been given a very high place as self-regulating systems, i.e. systems which are sustainable and self-correcting through feedback. Proponents of the Systems Theory (Bertalanffy (1950); Laszlo (1972a); Capra, F. (1997)) in the West and a greater body of saints/seers in the East, from times immemorial, have shared the viewpoint.

The orchestration and convergence of an aggregate of a thousand bees drawing nectar from various ecological floras and converting that to an immortal property called 'honey' is analogous to the highest wisdom of realization, called '*Madhu-vidya*' in the Upanishads.

The aggregation of bees (*bhramar* or *bhanwar*) is both a simile and an epitome of collective or universal consciousness as opposed to an individual or disjointed conscious being. Immortality or '*madhu*' is consequentially the epitome of immortal truth realized only in the collective-aggregate level of networks running through the universe.

In a universal personality a realized mind reflects the aggregate and is therefore immortal; a disjointed individual it is not. The modern idea of networking, array and matrices are therefore as old as the tradition of saints. Therefore, the wisdom of penetrating the ways in the aggregate 'bee-hive' or literally, the '*bhanwar gufa*' is the doorway to an integral match-point of the individual and the universal. The paper brings to light this extremely important area of seer-realization.

To do that, the paper proposes a discussion in three parts. The first two parts unfold the historical background and the psycho-somatic framework of the esoteric foundations, which are available only in the intuitive-contemplative inner laboratories of an aspirant's yogic mind.

The third and last part proposes a set of empirical research foundations based on an algorithm of science of numbers (called *samkhya* or codes), science of vibrations (sound or stimulus) and science of thought (logical or meaningful responses to stimuli).

■ CONSCIOUSNESS AND THE MODEL OF THE PERSON INDIAN PSYCHOLOGY

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Psychology in the Indian tradition is the study of the person. The person is conceived as a unique composite of body, mind, and consciousness. Body refers to the senses, the central nervous system, the brain, and other supporting physical structures. The mind is the cognitive instrument connected with the body at one end and consciousness at the other. Mind and body are physical, though the mind, unlike the body, is subtle and therefore manifests certain nonlocal characteristics. Consciousness is irreducibly distinct from the body and the mind. It does not therefore interact with mind or body. However, the mind by its association with consciousness manifests certain characteristics that physical things do not normally have. Even though the mind is physical, like the body, it cannot be reduced to its physical constituents, unlike the body. Again, a body or any mix of physical things cannot create a mind. Mind is a unique evolute of *prakriti*. It has a primacy of its own.

As a composite of body, mind and consciousness, the person functions at three different levels. In the area of knowing, for example, the person is capable of processing information sensorially. This may be considered the level of *observation*, which in the Indian tradition is referred to as *sravana*. The second level is the level of *understanding* facilitated by the active participation of the mind. This level is labelled as *manana*. The third level of *nididhyasana* involves transcognitive knowing or *realization* brought about by meditation, when the person is able to access consciousness as-such. A state of *realization* is different from *observation* and *understanding* in that it is trans-cognitive and transcends such dichotomies as subject and object, thought and action. In a state of realization knowing and being blend into each other so that one becomes/does what he knows. This is exemplified in the Upanishadic statement “to know Brahman is to be Brahman.”

Again, the person as a composite of body, mind and consciousness may be studied from three different perspectives – (a) physiological (b) psychological and (c) spiritual. From the physiological perspective, we seek to learn how bodily processes influence one's behaviour and being. From the psychological side, we may study the person to understand how mental states affect bodily states and how the latter may influence the mind. A person may be studied also from a spiritual perspective to learn about transcognitive states and how consciousness is involved in our being and to realize non-physical resources of human functioning. Different methods are needed to pursue these studies at different levels. However, the Indian approach is holistic in that the person cannot be studied meaningfully from any single perspective.

The goal of human endeavour is to progressively transform the person to higher levels of being, from the dominance of the physical to a realization of the spiritual. There are hurdles on the way; but there are also techniques and strategies one could use to transcend them. To do this, it is necessary to understand and appreciate the nature of consciousness.

We will discuss in this address in some detail the concept of consciousness in Indian psychology and its implications to the areas of consciousness studies, cognitive anomalies, positive psychology and transpersonal psychology.

■ THE SELF IN SCIENCE AND INDIAN MONISTIC SCHOOLS

MENAS KAFATOS

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Every human being, sooner or later, wonders about his/her purpose of life and how the individual fits in the general scheme of things, what is the right way to live, how to search for the right values and meanings of existence. These are ancient questions, still very relevant today, affecting every single human being in today's society. What is this sense of identity, or individuality, that has been with us from the day we were born until we pass on, what is this "self"? This is a deep question which philosophy has tried to address for at least 2,000 years. In the case of us, humans, the individual self is a conscious entity, with self-awareness and objectified awareness. Do other species possess a sense of self, like humans do, is consciousness a characteristic of life in general? Does life (and consciousness) exist throughout the universe?

In a more general sense, what is consciousness itself, how can one define it, what are its characteristics, and other such related questions, are at the forefront of both scientific and metaphysical inquiry. Although one would expect that consciousness should be subject to scientific investigation, in truth little progress has been made on that, last frontier, of science. We know more about galaxies billions of light years away than we know what a thought is, how it is produced, its connection with the neuronal hardware.

■ AN EVENT CONTROL APPROACH TO UNDERSTANDING SELF AND CONSCIOUSNESS

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One approach that is based on close relationship between perception and action is the event-control approach that emphasizes control of perception-action events. I will discuss findings that indicate the importance of control for visual awareness as well as sense of agency. I will argue for an event-control hierarchy approach for naturalizing 'Self', focusing on the perception-action regularities at different hierarchical levels. The amount of control at different levels of hierarchy determines the nature of self. I will present results from two experiments using a multi-agent scenario (sharing a common goal) in which an agent is partially controlled by the participant. Identification is dependent on the amount of control and the relationship is determined by whether the goal is achieved. Sense of agency or self is dependent on the highest level of control of hierarchy exercised (goal when successful and perceptual-motor level when not successful). The sense of agency increased with the amount of control in the highest level of control hierarchy. The amount of control also influences what the way we perceive our actions and their consequent perceptual effects. The results from these novel experiments support a hierarchical event-control model of self and consciousness.

■ THE CONSCIOUSNESS QUOTIENT: INTRODUCING CONSCIOUSNESS EXPERIENCE AS A RESEARCH VARIABLE IN PSYCHOLOGICAL ASSESSMENT

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The scientific evaluation of consciousness has been a topic debated over the last century by different scientific communities in different academic fields: psychology and cognitive science, philosophy, neuroscience, psychiatry, and lately, by quantum physics. As consciousness is a subjective experience, the first person approach seems to provide valuable information, but unfortunately the first person methods offer no scientific results, unless statistical analyses are provided (Varela & Shear, 1999; Dennett, 2001).

The research problems come from the methodological inability to isolate consciousness as an individual phenomenon. Consciousness seems to be different from all other scientific concepts, and it has been extraordinarily difficult to treat it as a variable (Baars, 1997). In psychology, measuring the consciousness experience with assessment instruments and statistical methods has been a rare topic of research, maybe because psychologists find it difficult to create a method that would reach a satisfactory level of significance of the results (Natsoulas, 1990).

Since 2005 I been developing the Consciousness Quotient Theory and the CQ Inventory (CQ-I ©), as a part of my PhD thesis. This process took me eight years, while trying to figure out a way to identify and scientifically measure the so-called “aware/conscious behaviors”. CQ-i was developed through 14 studies on a population of 6,800 individuals, until the CQ-i beta version was first released in 2008, and presented the following year at the Toward a Science of Consciousness conference. Since then, it has been updated many times in order to become a very reliable and valid assessment instrument that measures consciousness as a psychological variable. The validation studies included explorations of its concurrent validity using inventories such as CPI, EQ-i, NEO PI-R, GAMA and MSCEIT. Qualitative explorations based on Willis's cognitive interviewing methodology (Willis, 1999) and extensive library research were realized during this period of time. However, around one third of the conscious/aware behaviors described have not been found in scientific literature, but were included in the inventory as valuable experiential data from the eastern wisdom of consciousness.

The Consciousness Quotient Inventory is composed of six dimensions, which comprise the Consciousness Quotient: physical, emotional, cognitive, spiritual, social-relational and self-consciousness. These six dimensions are the main six factors of the Consciousness Quotient Inventory. CQ-i explores these dimensions, using behavioral-based questions scored with a Likert scale with six degrees.

The adjusting process ended in January 2013 and the resulting CQ-i 2013 is now available to researchers worldwide. The exploration process will last until 2014. Meanwhile, the scientific community is invited to contribute to this science endeavor by using CQ-i on various populations, and discussing ways to improve it on the online forum at the CQ Institute website.

CQ-i can be used for evaluating personal development or in psychotherapy when evaluating the progress of a client. Other areas include leadership, employee satisfaction, digital interactions, the arts, medicine, military applications and the efficacy of religious techniques. CQ-i is free to use by researchers in educational fields and for individual online testing on the CQ Institute website.

There are lots of applications of the CQ Inventory. CQ is a non-cognitive predictor for academic performance, and it may be useful for evaluating professional performance in call centers and customer care departments. CQ-i can be used in psychotherapy, for evaluating personal development. Other areas include leadership, employees' satisfaction, digital interactions, arts, medicine, military field and efficiency of the religious techniques. CQI is free to use by researches in educational field.

■ DOES THE QUANTUM THEORY MAKE ROOM FOR THE CAUSAL POWERS OF CONSCIOUSNESS?

PAAVO PYLKKANEN

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And

Department of Philosophy, University of Helsinki, Finland

Does consciousness have causal powers? More specifically, does it make a difference to the effects of information processing, whether or not the system is conscious of that information? There is a growing body of evidence suggesting that astonishingly much of our most sophisticated brain functions work totally independent from consciousness (see e.g. Walla ed. 2012). These results call into question the assumption that the conscious self plays a crucial causal role in complex human cognitive and emotion-related information processing, and in the way this information guides behavior. Indeed, since Libet's 1985 work on the neuroscience of free will, the notion that the conscious will is not the original determinant of action has won increasing support among neuroscientists – Wegner being a prominent contemporary example. Yet there are those who hold that consciousness has a genuine and indispensable causal role to play. For example, as pointed out by Robert Van Gulick in his useful review, it has been suggested that consciousness provides an organism with more flexible control, better social coordination, more integrated representations, better informational access, genuine freedom of will and intrinsic motivation. I will consider these suggestions, drawing attention to especially how the putative causal role of consciousness connects with information. With this link between consciousness and information in mind, I will then consider Bohm and Hiley's notion of active information that is extended all the way to fundamental physics at the quantum level. In this broader context I will finally consider how we might understand the role that consciousness seems to play in information processing. Quite often philosophers appeal to the causal closure of the physical domain as a reason why mental properties cannot possibly influence physical processes. However, if information plays a key causal role at the quantum level, and if we can develop a plausible and coherent view of how consciousness might influence that information, the way is open to understanding how consciousness could influence physical processes in the brain in a very fundamental and subtle way.

■ QUANTUM MODELS OF COGNITION

PETER BRUZA

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The cognitive revolution that occurred in the 1960's was based on classical computational logic, and the connectionist/neural network movements of the 1970's were based on classical dynamical systems. Therefore, classical assumptions remain at the heart of both cognitive architecture and neural network theories, and they are so commonly and widely applied that we take them for granted and presume them to be obviously true. Quantum theory, on the other hand, provides a fundamentally different approach to logic, reasoning, probabilistic inference, and dynamical systems. The fundamental implications of these contrasting approaches will be examined with concrete examples drawn from cognition and decision theory. For example, in order to model a cognitive system, we habitually assume the system can be decomposed into component parts, and then the "whole" is assumed to be the "sum of the parts". So much so, the question of how to view, understand or model a cognitive system in a *non-compositional* way has an oddly unfamiliar ring to it. This presentation will explore the validity of this assumption by utilising probabilistic methods developed for analysing composite systems in quantum theory and applying them to cognitive phenomena. For example, conceptual combinations cover a broad range of compound phrases ranging from the everyday "black cat" to novel compound nominals such as "cactus fish". In both cognitive science and linguistics the prevailing view is the semantics of a concept combination are compositional, i.e., the semantics of the combination are assumed to be determined only from the semantics of its constituent concepts. In the emerging field of quantum cognition several articles have speculated that concepts in human semantic space may sometimes behave like quantum entangled particles and hence be *non-compositional* cognitive phenomena. Whilst the examples used will shed light on the supposed compositionality of conceptual representation in cognition, the analytic methods are more broadly applicable. A key underlying theme is that quantum theory provides both a conceptual framework and associated formalism to model - in a holistic way - highly contextual phenomena, such as human cognition. The talk concludes by highlighting some tentative connections between this holistic theme and Bohm & Hiley's intuitive understanding of quantum non-locality.

■ CONSCIOUSNESS

PETER H. ROE

Professor Emeritus

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This presentation brings together some thoughts and experiences which may help in the establishment of a science of consciousness. It contains two examples of the loss of awareness caused by traumatic events, which themselves give indications of the physical reality that consciousness is a state of the brain. Brief mention is made of higher – spiritual consciousness, - and lower – subconsciousness - levels of awareness. It is pointed out that achievement of better worldliness can be a result of attainment of higher levels of spiritual consciousness.

■ THE DYNAMICS OF CONSCIOUSNESS

PETER WALLING

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We argue that conscious perceptions are not amenable to direct physiological observation, however, the mesoscopic electrical brain changes which correlate with perceptions are. The basics of non-linear dynamics are explained with reference to fractals, attractors and non-integer dimensions.

We use non-linear measures to examine the dynamical correlates of the emergence of consciousness from anaesthesia, evolution, sleep, and show how non-linear changes occur in the formation of a combined sensory experience, or “Gestalt”.

We offer a dynamical explanation of “the conscious moment” which extends the idea of “Freeman’s Mass Action” suggested by Dr. Walter J. Freeman.

■ THE HIGHER-ORDER THOUGHT (HOT) THEORY OF CONSCIOUSNESS AND ITS NEURAL REALIZATION

ROCCO J. GENNARO

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The higher-order thought (HOT) theory of consciousness is a representational theory of consciousness which says that what makes a mental state conscious is that there is a suitable HOT directed at that mental state. Thus, it seems that any neural realization of the theory must be widely distributed in the brain, but it remains unclear just how widely distributed it needs to be. I argue against the view that HOT theory should treat first-order (i.e. world-directed) conscious states as requiring prefrontal cortical activity. There are at least two advantages to this view. First, there is little evidence to suggest that typical first-order conscious states involve prefrontal cortical activity as opposed to other more limited cortical activity (such as recurrent feedback loops in other brain areas). However, when HOTs are themselves conscious, we instead have “introspection,” “executive control,” and other more sophisticated mental abilities, which are rightly associated with the prefrontal cortex. Second, if HOT theory required prefrontal cortical activity for all conscious states, then it is needlessly susceptible to the criticism that HOT theory rules out animal and infant consciousness. I therefore challenge arguments made both by opponents of HOT theory, such as Block and Kriegel, as well as supporters of HOT theory, such as Rosenthal and Lau. I do agree with the latter pair, however, that there is good empirical and philosophical support for the higher-order view and I do in fact hold a version of HOT theory (R. Gennaro, *The Consciousness Paradox: Consciousness, Concepts, and Higher-Order Thoughts*, MIT Press, 2012).

■ WHY 'SHE' IS 'ME'? A COMPARATIVE DISCUSSION ON BODY AND THE SELF

SANGEETHA MENON

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In an article titled "She won't be Me" in the recent issue of the *Journal of Consciousness Studies* Susan Blackmore presents a provoking thesis. Her thesis is that many selves exist, the self by itself is fleeting, and there is no continuous self. The 'she' of the previous moment is not the 'me' of the present moment.

I wish to make a critical review of this thesis with the help of the Vedantic theory of body and embodiment and establish why 'she' is 'me' and there is self-continuity. Our existence even in the moments of aware discrete events is in the form of an agent and enjoyer of the action not just for that moment but for all moments that preceded and are yet to follow. Such continuity is definitely designed and customized by the culture we come from and the life styles we adopt so as to present our personal identities. Yet there are universal and trans-cultural factors in the experiences that incur from the moments of events.

The argument Blackmore presents is that every experience would have a subject of its own and as experiences appear and disappear the selves also appear and disappear. The central problem in such an argument that takes experience to be the causal agent for the self is that it cannot account for the very existence of experience in the first place. To have a self that experiences the experience at any given moment it is necessary for the subject to have continued from a previous experience. What is that which connects the subject of the previous experience to the subsequent experience? Memories can only give continuity to the content of the experience but not the subject itself since there has to be a prior beholder of memories who can recall them at will. In which case, to whom does the first experience belong? And to whom does the subsequent experience accrue? Experience itself is influenced by the continuity of the experiencer as a continuing self who contributes to the content of each experience with his or her memories, choices, attitudes and responses.

■ THE NEURAL CORRELATES OF CONSCIOUS AWARENESS REVEALED BY THE STUDY OF COMA & RELATED STATES

STEVEN LAUREYS

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The past 15 years have provided an unprecedented collection of discoveries that bear upon our scientific understanding of recovery of consciousness in the human brain following severe brain damage. Highlighted among these discoveries are unique demonstrations that patients with little or no behavioral evidence of conscious awareness may retain critical cognitive capacities and the first scientific demonstrations that some patients, with severely injured brains and very longstanding conditions of limited behavioral responsiveness, may nonetheless harbor latent capacities for recovery. Included among such capacities are particularly human functions of language and higher-level cognition that either spontaneously or through direct interventions may reemerge even at long time intervals or remain unrecognized.

When patients in “persistent vegetative state” (recently coined unresponsive wakefulness syndrome) show minimal signs of consciousness but are unable to reliably communicate the term minimally responsive or minimally conscious state (MCS) is used. MCS was recently subcategorized based on the complexity of patients’ behaviors: MCS+ describes high-level behavioral responses (i.e., command following, intelligible verbalizations or non-functional communication) and MCS- describes low-level behavioral responses (i.e., visual pursuit, localization of noxious stimulation or contingent behavior such as appropriate smiling or crying to emotional stimuli). Patients who show non-behavioral evidence of consciousness or communication only measurable via ancillary testing (i.e., functional MRI, positron emission tomography, EEG or evoked potentials) can be considered to be in a functional locked-in syndrome.

An improved assessment of brain function in coma and related states is not only changing nosology and medical care but also offers a better-documented diagnosis and prognosis and helps to further identify the neural correlates of human consciousness. Taken together, recent studies show that awareness is an emergent property of the collective behavior of frontoparietal top-down connectivity. Within this network, external (sensory) awareness depends on lateral prefrontal/parietal cortices while internal (self) awareness correlates with precuneal / mesiofrontal midline activity. Of clinical importance, this knowledge now permits to improve the diagnosis of patients with disorders of consciousness, which remains very challenging at the bedside. Current technology now also permits to show command-specific changes in EEG or fMRI signals providing motor-independent evidence of conscious thoughts and in some cases even of communication. We will conclude by discussing related ethical issues and the challenge of measuring and improving quality of life in these challenging patients with disorders of consciousness.

■ MACROSCOPIC QUANTUM PROCESSES AND CONSCIOUSNESS

SUBHASH KAK

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In recent years quantum mechanical coherence has been invoked to explain photosynthesis, bacterial complexes, and the ability of birds to navigate using Earth's magnetic field. Given this it is of interest to see if similar quantum mechanical coherence can help in the understanding of the phenomenon of consciousness. Although there are limitations of the use of reductionism in the study of mind and consciousness, it is used in most discussions of the subject. Opposed to reductionism is the viewpoint that although mind requires a physical structure, it ends up transcending that structure. Just as there exists the outer cosmos – the physical universe –, there also exists the corresponding inner cosmos of the mind. The mind processes signals coming into the brain to obtain its understandings in the domains of seeing, hearing, touching, and tasting using its store of memories. The cognitive act is an active process where the selectivity of the sensors and the accompanying processing in the brain is organized based on the expectation of the cognitive task and on effort, will and intention. The structure of the inner cosmos mirrors the outer cosmos at some level and the relationship between the two is discussed widely in the Indian spiritual tradition. If quantum theory describes processes for the outer cosmos, consciousness does so for the inner cosmos. In this lecture we will ask if quantum theory must ultimately underlie the processes in the inner cosmos. And if so, should be possible for consciousness to influence the outer cosmos? We will also broadly describe the essentials of the Vedic view on the subject. Consciousness is complementary to space, time and matter, but it needs material support to be embodied as “awareness”. Conversely, it is meaningless to speak of a universe without observers. If we accept that we have discovered the basic laws of nature and also that classical machines cannot be conscious, one may like to assume that quantum processing in the brain, given appropriate brain structures, leads to awareness. Different states of consciousness such as wakefulness, sleep, dream-sleep, coma have distinct neurochemical signatures, and these different states may be taken to be modifications caused by the neural circuitry on a basic state of consciousness. But quantum machines cannot be assumed to have the capacity to be conscious because of the observer paradox. We suggest that improbable coincidences corroborated in science and literature or accounts of scientists that they arrived at their discovery in dream or suddenly without deliberate thought support the existence of a universal consciousness principle, but, of course, they cannot be taken to be proof for it. We will present a mathematical framework for recognizing whether specific macroscopic processes have a quantum basis.

■ A PHYSICAL BASIS FOR A NANONEUROSCIENCE OF MEMORY AND CONSCIOUSNESS

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Current neuroscience asserts that higher cognitive functions, including memory and consciousness, are emergent properties of the brain stemming from the numerous synaptic connections between neurons. However, the molecular mechanisms that give rise to these phenomena are not fully understood. Modulation of synaptic strength alone cannot accommodate for the enormous amount of information processing these tasks require. The microtubule cytoskeleton is a subcellular structure involved in neural function that has the potential to perform subneural nanoscale computations vastly increasing the brain's processing capabilities. Over a decade ago it was postulated that consciousness stems from quantum computation in neuronal microtubules, however, only recently have scientific findings supported the necessary involvement of quantum coherence in biological systems. We have found that microtubules possess a distinct architecture of chromophoric amino acids that can plausibly support delocalized quantum states. These states can be influenced by protein conformation, post-translational modifications of microtubule subunits, or interaction with associated proteins. Our analysis shows information storage via post-translational modifications of microtubule subunits is a robust encoding mechanism with a large memory capacity. Furthermore, based on this framework we have shown that disruption of normal microtubule function via volatile anesthetics or the pathologic conditions of Alzheimer's disease can result in cognitive impairment, including loss of consciousness. In conclusion subneural biomolecular computation coupled to post-translational modifications of the microtubule cytoskeleton provides a comprehensive framework for describing the molecular underpinnings of higher cognitive functions that is consistent with current neuroscientific theory.

■ CHAOS AND ORDER IN THE UNIVERSE

VAHE GURZADYAN

Yeravan Physics Institute
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To which extent our future is given? What are the limits of predictability in the Universe? Where are the roots of time asymmetry and of the arrows of time - thermodynamical, cosmological, electromagnetic, quantum-mechanical, psychological (knowledge of the past but not of the future)? These issues will be discussed within the concepts of chaos and order as typical properties of variety of physical processes and being studied in the theory of dynamical systems. De-correlated initial conditions and no-memory (Markovian) dynamics both are necessary for the emergence of the thermodynamical arrow of time for a system evolving according to non-unitary dynamics, and a quantum measurement can be explained within quantum statistical mechanics as a consequence of thermodynamical arrow. Chaos and regularity have essential impact in the features of the surrounding Universe, from the dynamics of the Solar system to the structure and evolution of galaxies and processes in the early Universe.



Concurrent Abstracts

SESSION C1 : EXPERIENTIAL AND EXPERIMENTAL STUDIES I

■ 92. EFFECT OF MUSIC ENRICHMENT PROGRAMME ON CONSCIOUSNESS OF MENTALLY CHALLENGED CHILDREN

MANU SHARMA, SONA AHUJA, RANJEET KAUR SATSANGI

The present experiment examined effect of music enrichment programme on physical, mental, social, emotional, and spiritual self-consciousness of mentally challenged children. The study was conducted on forty mentally challenged children. Quasi-experimental pre-test-post-test control group design was adopted to conduct the study. The participants of experimental group were exposed to music enrichment programme for six months. Measurements of Consciousness Quotient were obtained using five-point Likert Scale to measure consciousness of mentally challenged children. The results were analyzed using Man-Whitney U-test through SPSS 16.0. The findings indicate that music enrichment programme has significant effect on certain dimensions of consciousness. The study highlights the effect of music in raising specific dimensions of consciousness of mentally challenged children.

■ 177. CONSCIOUSNESS AND THE VISUAL PROCESS: A SEARCH FOR THE FUNCTIONAL AND NEURAL CORRELATES OF PHENOMENAL CONSCIOUSNESS

ASAF BEN SHALOM

Are we conscious of everything we see or just part of what we see? Vision is prevalently viewed as a serial process, whose end result is an experience we call seeing. The debate about the location from which conscious phenomenal experience emerges in the visual process is a subject shrouded in theoretical controversy. Although the end result of the process is clearly conscious, we have no way of knowing what it is that makes it conscious. To make the situation even worse, by our current scientific methodologies we have no way of refuting the possibility that our cognitive access to our own experiences is constitutive to what makes them phenomenally conscious. Our current path of investigation is finding which features or processes of "seeing" we can find in clearly conscious visual experience that could be accounted for the emergence of our phenomenal experience. When such features have been found, we can search for the temporal window of that feature realization in the visual hierarchy. Finding the neural architecture and processes that are present in our clearly conscious visual experiences would help in deciding where a representation becomes phenomenally conscious. In our investigation we use classical psycho-physical methods to probe the nature of two separate visual representations : visual working memory, and sensory (iconic) memory. Eventually we might end up finding that we can accept a neural architecture of phenomenal consciousness that can be detached from the mechanisms of cognitive access.

■ 181. MAN – AN IDEAL EQUIPMENT FOR THE MEASUREMENT OF CONSCIOUSNESS

SOAM PRAKASH

The measurement problem will remain mysterious in times to come as the basic problem is in making assumptions itself. The superimposed prohibits to definite assumptions. The finding of the observed events is difficult. Recently published experimental work reports

that a specific state of human consciousness has been observed to disrupt remotely the spatial super imposition of photons state in a Michelson interferometer, detachably reducing the level of interference between two beam path. This instrument is serving as remote detector for the brain state compounding to induced state of consciousness. However, when considering the role of consciousness in the physical universe, the scientists are handicapped by the fact that their traditional experimental techniques do not involve humans as a part of the apparatus, or even as subject of enquiry, even after Planck postulated that electromagnetic energy could be emitted and absorbed only in discrete quanta (Haisch et al, 1997, Darling 2005, Mercer et al 1997, Mitchell and Staretz, 2011, Grant 2002). The role of Man as instrument itself is being ignored, through the very concept of Bohr (1905) that a phenomenon is a phenomenon only it is being observed.

■ 194. A CORRELATIONAL STUDY OF HAPPINESS AND SPIRITUAL INTEREST

RANJEET SATSANGI, GURU PYARI PRAKASH

A desire to acquire pleasure or to avoid pain appears to be the motive of all animate volition and acts, as the ultimate aim of any person is the acquisition of supreme pleasure and complete elimination of pain. Pleasure or happiness, whether it is coming from internal or external source, is deeply related with spiritual interest. It is assumed that a person highly interested in spirituality and possessing a positive attitude for spiritual practices like fasting, meditation and yoga etc. is always happy in life since according to scriptures of various religions, real happiness comes from insight and not from outside material achievements. This study is an attempt to explore what is written in the holy books about the happiness. The results of the study conducted upon 31 male and 76 female pupil teachers of B.Ed. classes show a substantial positive relationship in happiness and spiritual interest scores. Male pupil teachers show more happiness in comparison to their female counterparts which is significant at 0.05 level.

■ 201. INTUITION AS A NECESSARY CONDITION FOR ACCESSING HIGHER STATES OF CONSCIOUSNESS AND GOD REALIZATION

MANI SUNDARAM, DAYAL SAINI

This paper argues that intuition is a necessary condition for accessing higher or transcendental states of consciousness and for God-Realization. Intuition comes from the Latin word 'intueri', meaning 'to look inside' or to 'contemplate'. Generally, it is thought or understanding without conscious recourse to thought, a sort of 'gut' feeling. However, it is interpreted differently in different disciplines.

In Western philosophy, it is considered to be prior knowledge or belief, and characterized by immediacy. According to Immanuel Kant, intuition is sensory information, a kind of perception. For him, intuition is pure reasoning. In contrast to his view is Bergson's empirical view that regards it as experiential knowledge and the method of metaphysics. As such, Bergson's view is similar to Eastern philosophy, but the Absolute for him is the transitory word, hence it not a method for experiencing higher or spiritual reality. Thus, it is an act of intellect. However, In Spiritual traditions, intuition is not an activity of intellect, but is an experience of spiritual realm, by opening of third eye. It is self realization, self-knowledge that is needed for accessing higher / transcendental states of consciousness, ultimately, pure spiritual consciousness or Samadhi / moksh.

SESSION C2 : EXPERIENTIAL AND EXPERIMENTAL STUDIES II

■ 208. MEASURING INTUITIVE CONSCIOUSNESS

NANDITA SATSANGEE, PREM PYARI DAYAL, SURILA AGGARWALA, SOAMI PIARA SATSANGEE

The paper deals with the development of a comprehensive measure of intuitive consciousness. It aims at clarifying the notion of intuition and its constituent skills, critically examining its measuring devices currently in use and presenting the construction and features of the Intuitive Consciousness Test Battery (ICTB) a comprehensive battery of tests developed to measure the multiple dimensions of intuition.

■ 218. EFFECT OF MEDITATION ('OM' CHANTING) ON ALPHA EEG AND GALVANIC SKIN RESPONSE: MEASUREMENT OF AN ALTERED STATE OF CONSCIOUSNESS

HIMANI ANAND, IRA DAS

Consciousness is one's awareness of mental activities and processes going on in one's mind at any given moment, as well as one's awareness of objects and events in the external world. It includes awareness of sensations, perceptions, thoughts, feelings and memories. Meditation is a process of employing mental exercises to achieve a highly focused state of consciousness. It is a Vedic exercise which can be used as a powerful instrument to restrain sense organs, control autonomic nervous system and also to attain higher states of consciousness. Through meditation a person is expected to get mental peace. Electroencephalograph (EEG) and Galvanic Skin Response (GSR) can be used as indicator of an alteration in an individual's state of consciousness. This research investigates the effect of meditation (Om Chanting) on EEG and GSR, an altered state of consciousness, under scientifically controlled conditions.

■ 258. ON MEASURING REFLECTIONS OF CONSCIOUSNESS: A NEURONAL APPROACH

JYOTI KUMAR ARORA, SANT KUMAR GAUR, DAYAL SARAN MISHRA, SANJAY BHUSHAN

From ancient times to modern era consciousness has remained a mystery. Various definitions have emerged to define consciousness. A common observation can be understood to dwell into one's understanding that the state of awareness of a sentient entity from 'wakefulness' to a 'state of sleep' or to a 'state of coma' or 'unconsciousness' is nothing but stages of consciousness. It is difficult to answer whether consciousness exists even after death or that whether the species of lower order say a worm or plant can be considered to be conscious. Further, how to answer the movement of tectonic plates in subtlest manner and in abstract sense. Can rocks be considered to have consciousness as they happen to change their profile over time? As we probe deeper, the question of consciousness becomes confusing. Psychologist find it in the part of cognitive, biologist try to understand it in the realm of microtubules in brain, computer scientists try to explore it in terms of strong and weak AI while engineers conceptualize it as a system with spiking neural network working behind it in terms of biological neurons. Mystics try to explore it in the domain of spirituality. Whatever is the confusion, one thing remains common that the consciousness is subjective and has its root in the cognition of self awareness. The fact that 'I am' exemplifies the fact that consciousness has crept in and all the phenomenon that happen or are being observed as a happening is the result of the effect of consciousness on entities or non-entities. All

observations, whether man made or natural, peaceful or chaotic, stressful or calm, are nothing but the reflection or effect of consciousness. An attempt to somehow observe and document or record this effect or reflection thereof can lead one to meter or at least comprehend level of consciousness in observables.

■ 402. INVESTIGATION OF METHODS AND DEVELOPMENT OF A DEVICE TO REMOTELY DETECT HUMAN EMOTIONS AND HENCE CONSCIOUSNESS

VIJAY MALHOTRA

This paper explores the diverse approaches employed by various researchers in the field of remote detection of human emotions and consciousness. We are interested in developing a device to collect and collate data on how human emotions change during spiritual practices and also the variations between the emotional states of regular meditators vs those of non-meditators. This would further help choose the most effective meditation technique for all those interested, especially in the scientific community.

■ 429. CORRELATIONAL STUDY OF TRIGUNA TEST WITH MYERS-BRIGGS TYPE INDICATOR (MBTI) TEST ON YOGA PRACTITIONERS: COMPARISON OF EAST-WEST APPROACH TOWARDS CONSCIOUSNESS

SHOBHA BHASIN, ASHWANI BHASIN, GURDEV ROY, SUKHDEV ROY

Eastern spiritual traditions reveal that all manifestation in creation, whether animate or inanimate and the constitution of mind, constitutes three Gunas (Trigunas) that are inseparable and simultaneously existing qualities, namely Sattva (pure, luminous and free from sorrow, binds us with happiness and wisdom), Rajas (passion arising from desire and attachment binding the self with compulsive action), and Tamas (born of ignorance, deludes all creatures through indolence and inertia). This paper makes an attempt to identify the degree of correlation between these two approaches on consciousness states of Yoga practitioners. We considered the Vedic Personality Inventory (VPI) developed by Wolf that had Cronbach $\alpha > 0.90$. The tests were conducted on 100 yoga practitioners in America and India. We found evidence of construct validity as manifest in theoretically expected correlations with conceptually similar and dissimilar measures. The study highlights the importance of multidimensional tests and/or multiple measures of a construct for consciousness studies. Since most concepts and phenomena in spiritual and transpersonal psychologies are complex, uni-dimensional instruments that assess these constructs as a global entity may not suffice for most research purposes. The above study would be useful for yoga researchers and/or transpersonally oriented studies.

SESSION C3 : EDUCATION AND CONSCIOUSNESS

■ 58. EFFECT OF VOLUNTARY LIBRARY READING ON HIGHER CONSCIOUSNESS OF STUDENTS

SARLA PAUL, NANDITA SATSANGEE, SOAMI PIARA SATSANGEE

Books are the most effective tool for training and promoting cognitive and affective development of consciousness among children. Reading a good book elevates the reader's spirit and thoughts, augments his store of knowledge, corrects moral ineptitude, provides impetus to understand, reason and interpret, enhances ability for abstract thinking and concentration and enables him to have a deeper understanding of himself and the universe. Reading is described variously as voluntary reading (Krashen 2004), leisure reading (Greaney 1980), recreational reading (Manzo & Manzo 1995), intensive reading, extensive reading and reading for information and pleasure. Reading for pleasure refers to reading that we do of our own free will without any expectation of external rewards. Researches prove that reading for pleasure imparts general knowledge (Cunning and Stonovich 1998), a better understanding of others cultures (Meek 1991), greater insight into human nature decision making power (Bruner 1996) and deeper understanding about our own self.

■ 93. RAISING CONSCIOUSNESS IN MUSIC HIGHER EDUCATION

ANNA-KARIN GULLBERG, HELOISA FEICHAS

The purpose of this paper is to illustrate how mentoring consciousness in music learning processes strengthens the development of students' multiple competences such as musical, social and emotional within an "un-schooling" learning community.

Western music education is grounded on one-to-one conservatoire teaching principles, where the master mainly transfers music skills to apprentices and not necessarily supports the growth of personal or spiritual consciousness. This tradition of non-relational view of learning has resulted in incapacity amongst teachers in dealing with students' non-musical needs and ignorance in facilitating collaborative processes in musical and social learning. Students still leave higher education as skilled technicians, but with sometimes less curiosity and unaware of themselves as social collaborators.

Is it possible to build a holistic approach, in which values such as cooperation and collaboration work in combination with the creativity potential of every individual? Through a collective learning context could an individual reach a state of autonomy, and being able to make his/her own choices taking all the responsibility about attitudes and behaviors? Two case studies could illustrate this approach: Boomtown Music Education and Pedagogy of Integration. These two "learning adventures" can illustrate the strength and challenges in integrating new paradigm ideas in one of the most traditional form of learning context – the University.

■ 105. ETHICAL EDUCATION FOR REACHING HIGHER LEVELS OF CONSCIOUSNESS

SANTHA KUMARI DEVULAPALLI, DURGA PRASADA RAO CHILAKAMARTHI

Science and Technological progress drifted individuals to a farthest shore forgetting the Basic ground of Morality and Spirituality. Ethical Education is that Education through which

people increase their likelihood to act ethically and a desire to do the right thing.

Ethics raise the Consciousness levels of the individuals to a higher level as to achieve multivariate, beneficial and meaningful, interests of others with a pure distinction of right. Thinking for our own benefits results in a worldly conscious personality. Ethical Education is a boon to transform a worldly conscious individual to a self conscious being by a mere differentiation of right and wrong, resulting in the omission of bad and inclusion of all good things beneficial to the mankind.

This Self Consciousness or Ethical Consciousness gradually and ultimately transforms into a Super or Higher Conscious level which is pure in its form. This higher level of Consciousness (Transmission from 'I-ness' to 'am-ness') is the key to Transcendental Happiness or Ultimate Bliss. Ethical Education elevates the knowledge, thinking, reasoning and logic and integrates the knowledge in a holistic fashion. Integrated knowledge with right thinking is the foundation for targeting the four pillars of Ethics. Sadachar (Good Manners) Swabhimaan (Self respect) Swadharma (Self religion) and Swarajya (Self Government) which leads to liberation of Self from his own territory to a higher abode of enlightenment.

■ 204. TEACHERS' FREEZING AND SPIRITUAL INTELLIGENCE: A COMPARATIVE STUDY

PREETI MANANI, RAJKUMARI KALRA, ANAND PYARI

The study was undertaken with the purpose to compare the spiritual intelligence of the high freezed and low freezed teachers. The sample of the study was selected by using simple random sampling method. Initial sample of the study was consisted of 100 secondary school teachers teaching in affiliated schools of U.P. Board of Agra city. Final sample of the study (30 high freezed and 30 low freezed teachers) were extracted from the initial sample by using Q1 and Q3 to see the exclusive effect of teachers' freezing on spiritual intelligence. The age range of the teachers was 30-40 years. Descriptive Survey method was employed in the present study. Teacher Freezing Scale by Taj (1998) and The Spiritual Intelligence Self-Report Inventory by King (2008) were used to measure the level of teachers' freezing and spiritual intelligence respectively. 't' test was applied to test the significance of difference which was found 10.36 significant at .01 level of significance.

■ 217. INTUITIVE CONSCIOUSNESS AND CREATIVITY AMONG UNIVERSITY STUDENTS

IRA DAS, POONAM SHARMA

It was hypothesized that if young girls and boys can have high intuitive consciousness they are also insightful and creative. So a 2 x 2 factorial design was used to see the effect of intuition and gender upon creativity of 100 university students in the age range of 20-26. The sample consisted of randomly selected 50 male and 50 female university students of Arts, Science, Commerce and Education faculties. Out of the sample of 100, 56 were under graduate and 44 were graduates. Intuition was measured by Intuitive vs. sensitivity scale taken from MBTI by Myers and Briggs. Creativity was measured by Divergent Production Abilities Scale by Sharma. Analysis of variance for creativity scores indicated a significant effect of intuition upon creativity of students, $F = 8.2465$ ($p < .01$). The mean creativity score of students with high intuition was 128.5714 where as mean creativity score of students with low intuition was 111.4074. The effect of gender upon creativity was not found to be significant, $F = .0179$ ($p > .05$). The interaction effect of intuition and gender was also not found to be significant even at .05 level ($F = .3744$, $p > .05$). This shows that high intuitive thinking fosters creativity among students, irrespective of the gender. The result showed that intuition enhances creativity of students for boys as well as girls.

SESSION C4 : PSYCHOLOGY, NEURO-SCIENCE AND CONSCIOUSNESS I

■ 35. THE NATURE OF EPISTEMIC FEELINGS

SANTIAGO ARANGO-MUÑOZ

Among the different phenomena that make up the mind, cognitive psychologists have postulated a puzzling one that they have called “epistemic feelings”, “metacognitive feelings” or “noetic feelings” (henceforth “E-feelings”). As with other feelings, their main characteristics are that they are phenomenal experiences and that they have a specific intentional content. The following are some instances of E-feelings: the feeling of knowing (henceforth “FOK”), confidence, uncertainty, the feeling of forgetting, and the tip-of-the-tongue phenomenon (henceforth “TOT”). Philosophers and psychologists have become interested in these experiences not only because of their puzzling character, but also because of the role they might play within the cognitive architecture and mental life of a subject. To understand why these kinds of experiences seem puzzling, think about the feeling of forgetting (henceforth “FOF”). Almost every person has at least once experienced a sudden FOF on her way out of a room. This experience seems puzzling because it indicates that something, to which the subject does not have access, is missing. It indicates that something is lacking, that there is a gap, and at the same time it indicates it in a very specific way: only a specific object would relieve the subject from this feeling. So, it is of interest to understand how this kind of feeling is produced and how it can point to an absent object, an object of which the subject is unaware.

This paper aims to characterize these experiences according to their intentional content and phenomenal character, describe the nature of this kind of mental state as non-conceptual in the cases of animals and infants, and as conceptual mental states in the case of adult human beings, and contrast three accounts that have been proposed to explain the eliciting of E-feelings: the doxastic account, the mental scanner account, and the heuristic mechanism account. The paper will argue in favour of the last one. Because of space constraints, the paper will focus only on examples extracted from memory studies to determine the nature of E-feelings.

■ 75. THE PATHWAY FROM EMOTIONAL MATURITY AND COMPETENCE TO SPIRITUALITY

VINEETA MATHUR, K.MAHARAJ KUMARI

The present research has been designed to assess and explore the relationship that exists between emotional maturity viz. patience, humility and compassion and emotional competence i.e. unconditional Love for the Supreme Being with Levels of Spirituality. The sample comprised of regular meditators of an ashram and beginners. The tool used for data collection included a Spirituality assessment questionnaire and an Emotional maturity and competence assessment Scale. The preliminary results show significant positive correlation between emotional maturity and emotional competence with spirituality for regular meditators of the ashram (compassion 0.50; humility 0.59; Love for Supreme Being 0.62). This may be because most of the people in this group have achieved a higher level of emotional maturity and competence through regular meditation and so are more spiritual. On the other hand the group of beginners showed only weak correlation with humility and compassion and negative correlation with EC as they lack emotional and mental control. Detailed analysis of the data is underway.

■ 81. CONDITIONING OF STUDENT CONSCIOUSNESS: AN EXPERIMENTAL STUDY WITH REFLECTIONS ON SIGMUND FREUD'S ICEBERG MODEL

BHAKTI KUMAR, SUGANDHA KHURANA, KAVITA KUMAR

The awakening of Spiritual consciousness in students is partially if not wholly dependent on conditioning of body, mind and soul. To bring consciousness into education, we must create a system that will elevate student potential. On these lines, the authors have taken Sigmund Freud's iceberg model which describes the levels of consciousness of mind- the conscious, the preconscious, and the unconscious. However, this topography of mind describes consciousness on the physical plane and rules out the spiritual plane. Spiritual consciousness is an extension of these physical and mental levels of consciousness. Hence, the authors take the liberty to further explore the metaphor of the partially submerged iceberg. As per the laws of physical sciences, the latent energy can bring about the change in the physical state, i.e. ice-water-vapor. Vapor is an extension of water, but the transmutation, which is the result of the latent heat, changes the texture and properties. It is proposed that a student's milieu is the latent energy that transforms physical consciousness of mind to the spiritual consciousness. To test this hypothesis, the authors administered a 'Spiritual Intelligence Test' (Kumar and Gautam, 2011) on two groups of 30 students each with different educational environmental settings. The statistical analysis of the results showed a significant difference in the spiritual intelligence of the two groups, as hypothesized ($t=6.05$, $p < 0.01$). The responses of the spiritually competent group were scrutinized to draw a conclusion that the proposed latent energy is responsible for the transformation of consciousness to a higher level. Further, the multidimensional and multifaceted aspect of the educational system contributing to the heightened spiritual intelligence of the group would be highlighted. Hence, an ideal but real educational system enhances the spiritual consciousness in students.

■ 161. EAST MEETS WEST: JUNG'S DEPTH PSYCHOLOGY AND PATANJALI'S YOGA SUTRAS

LEANNE WHITNEY

Jung was inspired and influenced by Eastern liberatory philosophies and psychologies. He carried around The Tibetan Book of the Dead and gave lectures on Kundalini Yoga. He studied Patanjali's Yoga Sutras and the Tao Te Ching. All these ways of liberation maintain that our egoic consciousness has no foundation in "reality;" that our ideas on a separate subject, a duality between ego and world, is based on limited thinking or "ignorance." Jung ultimately differentiated his work from the Eastern doctrines and techniques as he did not believe the ego could ever be completely transcended. Samadhi, a super-conscious state of absorption to the East, meant for him that one would become unconscious. Without an ego, he thought, there would be no one there to perceive. For Jung the ego and the unconscious are deeply embedded concepts. Depth psychology, as well as most Western psychologies, until the present day still lay their foundation on a belief in both.

In this presentation we will take a look at where Jung's psychology diverges from the East, in particular with Patanjali's psychology; and we will take a moment to contemplate and dialogue on whether the Western notions of duality, the separate subject, and a conscious/unconscious split, could impede our journey toward liberation.

■ 221. ENHANCING INTUITION THROUGH YOGA AND MEDITATION

SURILA AGARWALA, PREM PYARI

Nature and source of intuition are controversial issues, but all agree that intuition is an important source of knowledge. There are various researches on enhancing intuition among individuals. The present research has been conducted to see the effect of yoga and meditation on intuition. Sample for the study consisted of 3 experimental groups and 1 control group of subjects in the age range of 15 to 55 years. Group 1 consisted of 20 initiates with first and second Upadesh. Group 2 consisted of 20 initiates with first upadesh only and group 3 consisted of 20 pre-initiates (Jigyassus). A control group of 20 subjects was also selected. Pre and post design was used. MBTI (Myers-Briggs Type Indicator) was administered on all 4 groups. After pre measure of MBTI, experimental groups were given sessions (1 hour each) of Yoga and Meditation, thrice a week for 12 weeks, after which post measure of MBTI was taken on all 4 groups. MBTI measures preferences indicating (a) where people prefer to focus their attention and get energy (Extroversion or Introversion), (b) the way they prefer to take in information (Sensing or intuition), (c) the way they prefer to make decisions (Thinking or Feeling), and (d) how they orient themselves to the external world (Judging or Perceiving).

In all the 4 groups included in the sample, comparison of the above mentioned types was made in pre and post measures of MBTI using test of significance which revealed important changes in post measure, particularly in the way they prefer to take information (Sensing or intuition). These changes have been discussed in the present paper.

SESSION C5 : PSYCHOLOGY, NEURO-SCIENCE AND CONSCIOUSNESS II

■ 273. EFFECT OF YOGA AND MEDITATION ON DIFFERENT DIMENSIONS OF CONSCIOUSNESS

SONA AHUJA

The present study aims at examining the effect of Yoga and Meditation on physical, mental, emotional, social, self and spiritual consciousness. Pre-test-post-test control group design was adopted to conduct the study. The participants included both males and females. They were allotted to experimental and control group using stratified sampling method. The experiment was to expose the participants to the practice of Yoga and Meditation for 20 weeks. Consciousness of the participants was assessed using 'Consciousness Quotient Inventory' (CQI) developed by Brazdau (2012). The inventory administered before and after the experiment yields pre and post test scores of both the groups. The findings indicating the effect of the practice of Yoga and Meditation on consciousness are discussed by analyzing the pre-test and post test scores of the groups.

■ 285. SELECTIVE ATTENTION AND IMPULSIVITY

S.P. SINHA, YUKTI GOEL

The present study aimed to compare card sorting time of high and low impulsive subjects on various selective attention tasks. The sample consisted of 60 female subjects (30 high

impulsive and 30 low impulsive) from various faculties of Dayalbagh Educational Institute, Agra. The tools used were Eysenck Personality Inventory (EPI). A total of nine items were used to measure Impulsivity. Local and global stimuli task which consisted of 36 cards of large letters made up of small letters were used. The large letters are the global shape and small letters are the local shapes. With such stimuli it is possible to arrange for the local and global properties to be congruent (Global E composed of small Es) or incongruent (a global E composed of small Ss) A2 (Impulsivity: High vs low) X3 (types of task: Filtering vs Response interference vs Information integration) X2 (Dimensions of task: Local vs Global). Factorial design was used. The three way analysis of variance revealed significant effect of impulsivity, type of task and type of dimensions of the task on card sorting time. Response interference task was found to be most difficult as compared to filtering and information integration task. High impulsive subjects were found to be influenced by the global dimension of stimuli because of their vulnerability to stroop like response interference produced by that dimension. Thus high impulsive subjects have a more diffused manner of sorting and due to limitations of the central processing capacity of cognitive system, they suffer from performance deficit when different attentional tasks are presented.

■ 310. THE VOICE IN THE HEAD: THE ROAD AHEAD

HARI NARAYANAN V

The importance of talking to oneself in our experience cannot be overestimated though self talk has not been given sufficient attention in studies on consciousness and self. This paper examines some of the attempts to understand self talk and seeks to explain how it is constitutive of the self conception we reflexively assume in our day to day life. Further, it is argued that the possibility of revising the reflexive self conception through mindfulness amounts to changes in self talk as well.

The paper begins by examining Julian Jaynes's hypothesis of bicameral mind. As per the hypothesis, ancient people were not conscious of themselves in the way present day humans do. That is to say, they did not consider themselves as doing things on their own but as being led by some voice. This happened because the voices in the head were not treated as their own but as arising from some other source. Even though there is no adequate empirical support for this hypothesis, the bicameral mind thesis raises interesting possibilities about the evolution from the present self conception.

■ 327. THE IMPACT OF MIND WANDERING ON EMOTIONAL REGULATION

LI-HAO YEH, FANG-YING WEN

Mind wandering is a common phenomenon which may appear at any time and any location; for instance, individuals may engage in mind wandering while reading, listening, or even crossing a street in which paying attention to the passing by vehicles is necessary. During mind wandering, individuals cannot concentrate on the on-going task and are more likely to be intruded by Task Unrelated Thoughts (TUTs). Some researchers have proposed that mind wandering is a type of deficit on active inhibitory control. The lower active inhibitory control leads to more mind wandering which in turn will lead to more depression and maladaptation. However, other researchers have argued that the TUTs may play important roles on problem solving and learning which imply that mind wandering can help individuals cope with their daily lives. From our perspective, the seeming contradictory findings from literature actually spotlight different sides of mind wandering on its full spectrum. We propose that mind wandering is endowed with the function of self-defense mechanism on emotion regulation. We hypothesize that the appropriate amount

of mind wandering is beneficial for individuals' emotional regulation because it allows them to temporally deviate from their stress. Nevertheless, too much mind wandering may jeopardize individuals' connection with the real world and their normal cognitive control. On the other hand, too less mind wandering may render individuals directly under stressful situation without any "space" to hide. In this current study, participants without mood disorders are presented with negative emotional events and their state of mind at that time are measured. Immediately after the event presentation, participants' TUTs are measured in terms of its frequency, content and course. Afterward, participants' state of mind is measured once again in order to assess the degree of emotional recovery. We hypothesize that people who show middle level of TUTs will have better emotion regulation; moreover, people who show either low or high level of TUTs will show worse emotion regulation.

■ 400. THE SELF ORGANIZING UNIVERSE: APPLYING COMPLEXITY THEORY TO THE QUESTION OF PANPSYCHISM NEIL THEISE, MENAS KAFATOS

This paper argues that describing the universe as a hierarchy of self organizing complex systems reveals forms of universal complementarity at all scales. Smaller level interacting agents self-organize into "emergent" structures which then function as individual interacting agents at the next higher scale. Thus, choice of scale of observation determines whether something appears to be a unitary thing or, instead, a phenomenon arising from interactions of smaller things. One of us has posited "horizons of knowledge", applying at different levels, which, when approached, reveal complementary constructs. The set of all such constructs describes the complete reality under consideration but, as in the quantum realm, all constructs cannot be simultaneously revealed in a particular observational situation. Choosing to observe at any level of scale obscures phenomena examinable only at other levels of scale above and below. Similar to how experimental conditions determine whether one sees the reciprocal features of light, so the choice of observational scale allows one to describe the observed phenomena only as one kind of state vs. another. Thus, even at levels of scale governed by classical physics, observational choice remains inextricably woven into the establishment, in the observational moment, of the present conditions applying to the system under observation. To some theorists, this implicates consciousness itself as inextricably linked to the moment by moment evolution of the universe. In our view, the hierarchy of "horizons of knowledge, requires the interplay of the observer with the observed in a fundamental way, and as such "reality" is not immutable or external.

SESSION C6 : MEDICINE AND CONSCIOUSNESS

■ 20. PRINCIPLES AND PRACTICE OF PAIN AND SUFFERING MANAGEMENT WITH CLINICAL HYPNOSIS AND MEDITATIVE STAGES IN THE MIND-BODY GAP M. PAOLA BRUGNOLI, SIDDHARTH AGARWAL

This work will highlight the very best integration of our current knowledge regarding clinical hypnosis and meditative stages, as innovations in clinical practice such as the development of hypnotic suggestions based on new understanding of the neurophysiologic effects of

hypnosis and meditative states in pain and suffering relief.

A hypnotic ‘trance’ can be brought about by giving a willing patient instructions to focus on the hypnotist’s voice, to concentrate their attention, and to pay attention to their inner mental world. Some hypnotic inductions include suggestions for relaxation, but this is not strictly necessary. Researchers debate whether a hypnotic trance is an altered state of consciousness, that is, whether an individual’s consciousness is altered by becoming hypnotized.

■ 56. A STUDY OF THE LEVEL AND DEVELOPMENT OF CONSCIOUSNESS IN NEWBORN TO CHILDHOOD UP TO 2 YEARS OF AGE

ANJOO BHATNAGAR, BINDU DHINGRA, VIJAI KUMAR

An RCT was undertaken to study the neonatal primitive reflexes (which are present at birth and decline with development of brain (frontal inhibition) and change to postural and voluntary actions. The influence on these reflexes and pre- and post- intervention EEG of music vs. repetition of Holy Name RA-DHA-SOA-MI at 4 chakras by gently placing hand sequentially on these, was noted in 2 groups along. Similarly their impact on ABR (auditory evoked potentials) in the newborns will also be studied. The preliminary results of the study will be presented.

■ 97. NOË’S ENACTIVE APPROACH CANNOT HANDLE PHANTOM LIMBS

JASON FORD

Some people who are born without a limb will have a phantom of their missing limb. This causes intractable problems for Alva Noë’s Enactive Account of the content of perceptual states and experiences. I argue that this theory, in its current form, should be rejected. I also argue that there is a more moderate position, which would preserve some of the virtues of the Enactive Account, while accommodating the existence of aplasic phantoms.

■ 168. THE OBSERVER WITHIN CONSCIOUSNESS : EEG PERSPECTIVES

RUSSELL HEBERT

Recently a surge of publications from independent labs has shown the importance of long-range phase-synchronized alpha EEG (8-12 Hz) related to a variety of sensori-cognitive functions and in mental disorders. The question is why? Historically alpha has been relegated as an epiphenomenon and gamma EEG (~40 Hz) pertaining to content has dominated consciousness theory. In this article we propose that the reason for recently uncovered importance of alpha is that alpha represents the “observer” within consciousness and because of its wavelength is the primary resonance frequency (PRF) of the brain. In our previous work we experimentally examined a “pure global state” devoid of content and found that the “observer” remained intact as a highly integrated alpha standing wave. We determine here that alpha can justifiably be upgraded from the PRF to what we call the “master coordinating frequency” of the brain that interacts harmonically with n:m resonant frequencies. This places the phase-synchronized alpha observer in every experience. This orientation represents a paradigm shift in consciousness theory from an object-dominated to an observer-object theory.

■ 216. CONSTRUCTION AND STANDARDIZATION OF ANGER SCALE: VALIDATION WITH THE HELP OF EEG

SHRADDHA SHARMA, IRA DAS

Anger is a natural emotion which involves a strong uncomfortable and emotional response to a perceived provocation. Mild anger motivates an individual to take appropriate action in many areas of life. When anger goes beyond an optimal level it not only causes physical harm and psychological harm but it also intrudes with achievement of higher level of consciousness. So it is of great importance to control the anger and to express it in a healthy way (catharsis). In order to measure and compare anger among individuals a need for construction of anger scale was realized. Therefore, the researcher tried to construct a scale which could measure anger among individuals. Items with low coefficient of correlation ($r = .14$ or less) were discarded and finally 30 items with $r = .15$ to $.67$ were retained in the final test. Thus, internal consistency of Anger Scale was established. Test Retest Reliability of the scale (with a time gap of 25 days) came out to be $.86$. For establishing criterion validity, scores on Anger Scale were correlated with scores of well being. High negative coefficient of correlation of anger scores with well being indicated that the higher the anger, the lower is the level of well being among individuals. The coefficient of correlation was $-.85$. Construct validity was supported by significant positive relationship between egotism and anger also. The coefficient of correlation was $.65$. It shows that as the egotism increases the level of anger increases and vice versa. Validity of anger scale was established with the help of scores on EEG. The mean alpha waves of higher anger group was found to decrease significantly when subjects' anger was experimentally aroused. On the other hand Mean EEG scores of low anger group as measured by the Anger Scale did not change significantly. Thus, the validity of anger scale was experimentally established.

SESSION C7 : CHEMISTRY OF CONSCIOUSNESS

■ 243. PHYSIOCHEMICAL STUDIES OF MICROTUBULES

AARAT KALRA, SHIROMAN PRAKASH, AMIT MISHRA, HARINIPRIYA SHESHADRI

This paper describes additional characterization experiments on microtubules to shed light on some of the properties (conductivity, absorbance etc.) and lay the foundation for future theoretical and experimental studies. The talk is based on upcoming experimental work done in the labs of IIT Jodhpur. Using Scanning Electron Microscopy (SEM) we describe experiments that reveal structural morphology of microtubules. Experiments concerning their chemical nature will also be performed. We also suggest potential experiments comparing the properties of microtubules and man-made nanowires, with a view towards developing biologically-inspired nano-technology.

A detailed understanding of the physics of microtubules would provide traditional third-person scientific data that would either prove or refute the Penrose-Hameroff theory, and perhaps also address more general claims regarding the potential role of quantum mechanics in consciousness. We hope the experimental work described here, though currently in its early stages, would eventually contribute to this long-term goal.

■ 278. IN-VITRO MICROTUBULE ASSEMBLY AND ITS ROLE IN BRAIN COGNITION

PUSHPA SAHNI

Current research on how the brain produces consciousness suggests an essential role played by a protein polymer called microtubule inside brain neurons. The Penrose-Hameroff theory of Orchestrated objective reduction also subscribes to this view. Microtubule population is itself capable of carrying out collective actions. Like ant colonies leave behind the chemical trails (pheromones) and communicate, under appropriate conditions, neighbouring microtubules or microtubule population may communicate indirectly with one another by a stigmergic process involving the chemical trails (free tubulin) that they themselves produce. Thus, this raises the intriguing questions as to what extent microtubules, like ants and other social insects spontaneously develop very high-level behaviour extending up to what is called 'swarm intelligence' (Tabony, 2007). At present, there is a surge of interest in nanoscience-biophysical research in elucidating collective interactions between tubulin protein, neurotransmitters, and other microtubule associated proteins leading to supramolecular self-assembled microtubules, with the ultimate goal of relating microtubule to consciousness.

This paper presented our work on studying how the presence or absence of chemical energy, microtubule associated proteins (MAPs), anaesthetics affect the structure or biophysical states of microtubules present in neuron cells with the help of an in-vitro study, determination of number of hydrophobic pockets and biophysical states in tubulin heterodimer and study of electrical conductivity behaviour of microtubules with the help of Agilent Semiconductor Analyzer.

■ 314. N-CADHERINS IN NEURON-NEURON INTERACTION AND ITS POSSIBLE LINK TO SIGNAL TRANSDUCTION BY VOLTAGE GATED CALCIUM CHANNELS

AMOL TANDON, SATENDRA GUPTA

Voltage dependent calcium channels are a group of voltage gated ion channels with permeability to both Ca^{++} and Na^{+} ions, but their permeability to calcium being thousand times higher than that to sodium ions under normal physiological conditions. These channels are very essential for the excitation of neurons, besides regulating various functions in other cell types. Activated neurons can form a network by interactions between themselves, which is mediated by interaction of cell adhesion molecules called N-cadherins. N-cadherins promote neuron polarity and migration besides their role in adhesion. Since the cadherins are themselves dependent upon calcium (Calcium dependent cell adhesion molecules), we present in this paper a proposal for investigation into the link between neuron interaction and motility caused by a possible intersection of pathways of ion-channels and cadherins. The study will look into the molecular mechanisms and downstream signal molecules which can serve as a possible common link between the two pathways and further correlating the data to the mechanism of neural circuit activation and its role in consciousness of the brain.

■ 362. MERE PROTEIN MOLECULES? OR MUTATING MACHINES?--HOW EVOLUTION OF POSTTRANSLATIONAL MODIFICATIONS (PTMS) LED TO MICROTUBULE-BASED STRUCTURES WITH CONSCIOUSNESS-SPECIFIC PLASTICITY

JIM BERAN

This work explores hypothetical evolutionary paths that lead from simpler cyto-machines in pre-brain neurons to more complex dendritic cyto-machines with consciousness-specific features in brains like ours. Thanks to a suggestion from Dr. Travis Craddock that some PTMs approximate the time-scale at which conscious experience changes [3], we realized that processes that regulate PTM in cyto-machines (e.g. by regulating where, when, and how rapidly PTMs occur--generically "PTM regulation") might have initially evolved to increase stability of subsynapse cytoskeleton and later to change conscious experience. We therefore seek evolutionary paths that satisfy at least the following constraints: (I) Each of a path's transitions must be achievable by a set of DNA mutations that affects PTM regulation and that supports increased stability of subsynapse cytoskeleton; and (II) there must be a plausible scenario (an "RTP scenario") in which one of the path's transitions leads to cyto-machines capable of changing conscious experience in response to synapse signals, i.e. an example of "real-time plasticity" or "RTP". We also propose several intuitive assumptions to help narrow the field of possible evolutionary paths. Finally, we compare a number of evolutionary paths that satisfy these constraints and assumptions and that might have led to the proposed RTP scenario. If we can find further evidence for one such path, we will be more confident, not only that microtubules are more than just protein molecules, but also that dendritic cytoskeleton has features specific to consciousness.

■ 378. DIFFERENTIAL POST TRANSLATIONAL MODIFICATION (PTM) PATTERNS: DECIPHERING THE MOLECULAR BASIS OF CONSCIOUSNESS

UDAY SARUP, AMLA CHOPRA

Long filamentous polymers of tubulin heterodimer subunits called microtubules are imperative to the structural and morphological integrity of any cell type. But in neurons they seem to serve a far greater purpose than just that- one of imparting conscious ability. [Hameroff and Penrose, 1996]

When these microtubules are present in all cell types, why is it so that only neurons are the ones capable of rendering consciousness? Is there any difference in the microtubule structure between neuronal and non-neuronal cell types? These are the intriguing questions we seek to address. Previous evidences and ongoing investigations (on PC12, RAW 264.7, CHO cell lines) in our lab both suggest that there is no significant difference between the microtubules in these different cell types at a sub-cellular structural level, that can be visualised by fluorescence microscopy.

This leads us to believe that the differences lie at a more subtle molecular level rather than just due to gross structural differences. Recent findings [Janke and Kneussel, 2010] suggest these molecular differences may lie in the post translational modifications (PTM's) of the tubulin proteins and the diverse patterns in which these are expressed. These patterns may be at the α and β subunit level, at the amino acid residue level or in the type of PTM expressed. Further analysis and deciphering of the implications of these patterns of PTM's may hold the key to unravelling the molecular basis of memory, learning and consciousness.

SESSION C8 : BIOLOGY AND CONSCIOUSNESS

■ 122. THE CENTRAL NERVOUS SYSTEM IN THE BODY AND CONSCIOUSNESS

N PREM KUMARI

The Central Nervous System comprises Brain, Spinal Cord and the associated nerves which are instrumental in our becoming conscious of external objects and inner thoughts, feelings and transcendental experiences. Latest developments in Neurology and Neurophysiology are using very sensitive instruments like fMRI, EEG, SQUID etc to record electrochemical reactions in the brain cells (neurons) accompanying various conscious experiences (invasive). The moot question remains unanswered as to where from the consciousness appears and the mind experiences it? How do we feel pain or pleasure? How do we have aesthetic and mystical experiences? Neural correlates, physical correlates and cognitive correlates of these experiences are being measured and studied in psychology. But the question of causation remains unanswered. Can the Neural functions cause the experiences? Or we are only studying the outward reactions of the experiences at physical level? For studying higher consciousness, spiritual correlation is important to measure, as scientists measure only the secondary and tertiary phenomena instead of the primary phenomenon. But between the secondary and tertiary phenomena there is sheathing in between and that sheathing is the sheathing of the mind which is within the domain of psychologists. So an attempt is made in this paper to discuss the main possibilities in the light of latest scientific experiments and mystical writings and reports. An attempt is made in this paper to explore ways to measure the (spiritual) consciousness by non-invasive methods like study of external environment where specific electromagnetic waves are present when people meditate and these can be correlated with the primary effects of meditation.

■ 131. DOES WORKING MEMORY LOAD AND SCOPE OF ATTENTION INFLUENCE VISUAL AWARENESS?

AMRENDRA SINGH, NARAYANAN SRINIVASAN

How does attention affect visual awareness? Some have argued that attention could even oppose awareness and have used studies on attention and afterimages as possible evidence for such opposition. We have shown that changes in scope of attention affect visual awareness in terms of the duration of negative color afterimages. Given this relationship, we investigated whether working memory load and scope of attention influence the duration of negative color afterimages as well as phenomenal aspects like clarity and color. The scope of attention was manipulated using local, global, small and large stimuli and the working memory load was manipulated by using zero-back (low load task) and two-back tasks (high load task). Participants performed a central task (zero- or two-back) with small, large, local, or global letters in the presence of a blue square frame as an adapting stimulus in two different load conditions. Participants indicated the onset and offset of the afterimage. In addition, they reported the color and clarity of the afterimage on a 9-point rating scale. We found that load did not have a significant effect on any of the dependent measures. We found the duration of the afterimage increased with decrease in spatial spread of attention but no overall effect of level of processing. In terms of clarity and color, decrease in the spatial spread of attention increased the clarity of the afterimage. The result indicated that the changes in awareness are possibly mediated by differences in spatial

attention but not by changes in working memory.

■ 250. RESONANCE IN MICROTUBULES : THE POSSIBLE KEY TO MACROSCALE BIOLOGICAL QUANTUM COHERENCE & THEIR ROLE AS CIRCULAR WAVEGUIDES

SAATVIKI GUPTA

This paper looks into one of the most basic problems facing any quantum theory of consciousness, the problem of the generation and maintenance of macroscale quantum coherence within the brain. One of the earliest explanations was given by Frolich according to whom if the rate of energy supplied to certain kinds of biological systems is sufficiently large then the energy can get channeled into a single 'mode' which then may set up strongly excited coherent longitudinal electric vibrations. This idea was based on systems capable of electric dipole oscillations which could interact through long-range Coulomb forces and such an environment was proposed to exist in the microtubules (MTs) within neurons which had the requisite de-localized electrons and interconnecting chemical bonds capable of giving rise to a so-called domino effect ultimately leading to the brain acting as a single coherent entity.

■ 299. EVIDENCE FROM FIELD STUDIES OF CUTTLEFISH BEHAVIOUR AND INTRASPECIFIC COMMUNICATION TO SUPPORT POTENTIAL INVERTEBRATE CONSCIOUSNESS

KARINA HALL

Debates focusing on the ethics of human-animal interactions often hinge on the seemingly impenetrable question of non-human animal consciousness and the capacity of any given species to experience pain and suffering. An argument that is often postulated is that without linguistic skills, most non-human animals are incapable of access, phenomenal or self-consciousness, which comprise the basic prerequisites for awareness of negative affective states. In the absence of adequate knowledge, arbitrary lines are often drawn between primates and non-primates, mammals and non-mammals or vertebrates and invertebrates. Cephalopods (invertebrate molluscs) in particular have taxed these delineations because of their complex neurobiology and behaviours, and are now often 'given the benefit of doubt' and included with fish and other vertebrates in animal ethics regulations, but not without controversy and intersectoral inconsistencies in their treatment. In this paper, we present specific examples of cuttlefish behaviour and intraspecific communication that were collected during extensive field studies in their natural environment, including complex, directional and intentional signalling, deception and facultative behaviours consistent with conscious choice. Through this evidence, we posit that cuttlefish have sufficiently complex communication, cognition and self awareness to suggest (some level of) affective consciousness.

■ 376. EVOLUTION OF SPECIES: WHERE DID DARWIN GO WRONG

PREM DANTU

The influence of Darwinian thought has been so overwhelming and powerful that it was almost blasphemous to think any differently about evolution in the scientific circles. Student after student of biology were taught the same Darwinian principles of evolution. However, fossils of various groups indicate a rather discontinuous record and that once after coming into existence species have not changed much. Therefore, it is hard to believe a continuous

evolution had taken place as put forward by Darwin.

Religion of Saints and various extant religions have a unique view on creation. It is believed that various classes of organisms got created and evolved amongst themselves to adapt to local conditions and stayed immutable through the evolutionary time scale. It is the Spirit which traverses through these classes and evolves in its journey to the Ultimate Consciousness. The present paper discusses the lacuna in the Darwinian theory of evolution and puts forward the hypothesis that the concept of 'Blind Watchmaker' is wrong and a 'Conscious and Merciful Watchmaker' brought this creation into existence with the sole purpose of redemption of the Spirits.

SESSION C9 : COGNITIVE SCIENCES AND CONSCIOUSNESS

■ 32. NATURE FROM WITHIN - A SHORT DEFENSE OF THE DARWINIAN ARGUMENT FOR PANPSYCHISM

MICHAEL BLAMAUER

One of the fundamental assumptions of Evolutionary Theory (ET) is that organisms as well as species develop by a process of insensible gradation. Hence, in favour of the concept of smooth development, ET rejects the idea that new properties can emerge as sudden products of any onto- or phylogenetic processes. New properties are thus to be seen as a consequence of the rearrangement of already-existing ones. Now, human beings are very complex organisms and, as such, products of these evolutionary processes. Moreover, humans are conscious organisms, by which we mean that they host an inner life: there is something it is like to be such a being. Given that the property of being conscious is metaphysically fundamental and hence not identical with any physical properties of the organism, we face two alternative positions concerning the generation of consciousness. Either: (1) Consciousness is a gradually-gained evolutionary feature of a certain group of creatures, corresponding to the growing complexity of their nervous systems; or (2) Consciousness is an intrinsic feature of the basic constituents of nature itself, and thus ubiquitous. In this talk, we will evaluate these two alternative positions and finally defend position (2) as being more coherent and cogent. We will begin with some introductory remarks on the subjective nature of consciousness, to be followed by the first systematic section (I.), which will examine position (1). We will show that position (1) is problematic for two reasons: (a) it assumes that consciousness is a vague feature; and (b) it assumes the supervenience of consciousness upon complexity, which – as we will show – somehow infringes the continuity principle of ET. In the second systematic section (II.), we will advance a defense of position (2). We will argue that this position, which is a kind of panpsychism, can sidestep the problems of the other position because: (i) it is consistent with the subjective (non-vague) nature of conscious experience; and (ii) it is consistent with the continuity principle of ET.

■ 77. A THREE QUBIT MODEL OF CONSCIOUSNESS INTEGRATED JUNG'S PERSONALITY

HANS RAJ KANDIKONDA, MAHARAJ KUMARI KANDIKONDA

Theoretical models determine what we perceive, hence it is important to look for a model that can deal with holistic relationships. One such approach is to create a model based on quantum theory, which offers an axiomatic framework that can be applied to any type of system. In this study an effort is made to develop a model using three qubits to represent consciousness along with Jung's personality types. The human personality is hypothesized to be an integrated conscious-mind sentient entity under quantum theory. This work is a natural extension to the work of two qubits for C.G. Jung's theory of personality. In the original two qubit model, the psycho dynamics has been analyzed, but in the current study an elementary attempt is made to extend this model by adding a consciousness dimension. The three qubit model allows us to calculate expected values for the psychological functions and attitudes which in turn allow us to generate artificial personalities. A modified SL-TDI questionnaire was developed by including consciousness and materialism as an extra dimension. This was answered by 85 university students. The reliability of the data is evaluated with alpha co-efficient ($\alpha = 0.7$). From the questionnaire their personality type is evaluated and is compared to the artificial personalities generated by the 3 qubit model.

■ 117. ROLE OF SPATIAL ATTENTION IN EMOTION AWARENESS

MARUTI MISHRA AND NARAYANAN SRINIVASAN

Visual Attention has been shown to influence performance (accuracy and speed) in a large number of studies. However, whether spatial attention influences awareness (phenomenal experience) of a particular stimulus has been a controversial issue and is very difficult to demonstrate. In recent years, Carrasco and colleagues have shown that endogenous and exogenous spatial attention alter (enhances) the appearance of basic perceptual features like contrast, color saturation, spatial frequency and gap size. However, it is not clear whether such effects extend to higher order aspects like emotions. Previous studies have shown attentional benefits with emotional stimuli. In the current study, we investigate whether spatial attention alters emotional appearance. Attention was manipulated by using an exogenous cue followed by two emotional faces, one being the standard face (of fixed emotional valence) and other being the test face. Participants performed an orthogonal two alternative forced choice (2AFC) discrimination task (report whether the face with higher emotional intensity, that is happier or sadder, was presented a bit above or below the horizontal axis). This paradigm has been employed by Carrasco to investigate attentional influences on awareness. The emotional stimuli used were contrast-luminance matched oval cut human faces. In order to have faces that differ in terms of equal perceptual levels of emotional intensity, we rated the faces on emotional intensity and selected faces based on maximum likelihood differential scaling. Both the faces presented in a given trial were from the same person and differed only in terms of emotional intensity. We obtained the psychometric function and measured the point of subjective equality for both happy and sad faces in all the cue conditions. The results show that emotional faces appearing at the cued location were perceived as having a higher valence (more happy or sad) compared to the corresponding faces appearing at the uncued location or neutral cue locations. The study for the first time demonstrates that attention enhances the awareness of complex perceptual features like emotion. We are currently in the process of conducting human electrophysiological studies to understand the neural mechanisms involved in linking attention and awareness.

■ 215. A STUDY OF RELATION BETWEEN EGOTISM AND ATTACHMENT AMONG MARRIED AND UNMARRIED WOMEN

IRA DAS, ARCHANA SHARMA

For measuring the levels of Egotism (Ahankar) and Attachment (Moh), which are the vikaras of mind, a scale for measuring Egotism “Know Yourself (Part I)” and a scale for measuring Attachment “Know Yourself (Part II)” were constructed and standardized by the investigator. To study the relationship between egotism and attachment, these two scales were administered on a sample of 120 adult women (60 married and 60 unmarried). Results indicate a positive correlation (coefficient of correlation $r = .25$, $p < .01$) between scores of egotism and attachment. This shows that these two vikaras of mind are positively related to one another. Attachment (Moh) is a bond that involves desire for regular contact with the object or person of attachment and experience of distress during separation. Excess of attachment creates obstruction in achieving higher levels of consciousness. Egotism is an exaggerated opinion or inflated sense of one's own “importance or greatness”. Women with high egotism believe that they are the owner of all their physical and materialistic possessions and therefore, they are superior to others. They do not realize that their possessions and bodily characteristics are perishable and would not remain with them forever. So both attachment and egotism ultimately lead to grief because both are based on false cognitions related to possession of objects of physical world which are doomed to decay. Hence a positive correlation was found between egotism and attachment.

Further, it was found that there is no significant difference in egotism between married and unmarried women ($t = 1.5$, $p > .05$). Also no significant difference was found between level of attachment of married and unmarried women ($t = .55$, $p > .05$). These indicate that the problems of egotism and attachment are equally prevalent among women, whether they are married or not. Their minds are equally influenced by attachment and egotism. Remaining unmarried, does not facilitate achievement of higher levels of consciousness.

■ 345. INTEGRATION OF SUBJECTIVITY IN KNOWLEDGE GENERATION THROUGH ARTISTIC PRACTICES.

LUIS COQUENÃO, LUIS MIGUEL GIRAO

The adoption of Artistic Practices as research methodologies is instrumental in the integration of subjectivity in the production of scientific, reproducible knowledge, allowing for a holistic approach to the emergence of future sciences. Defining Art is for sure an impossible task as it can entangle many aspects of its realities. However, we are certain to declare artistic practice as a process of accessing knowledge. Furthermore, we believe in being able to demonstrate how Art can constitute a model of integration of subjectivity in the field of Consciousness Studies. Art is becoming an instrumental research methodology for future developments of the humankind, as can be demonstrated by the emergence of a number of institutional activities worldwide.

As a method of integration of subjectivity in the generation of knowledge, practices of Art can be structurally defined as infinite loops of trial and assessment of hypothesis. A good example is the practice of painting as a truly enactive activity. The continuous assessment of coherence of a painting emerging in front of its author is the leitmotiv for its development, until its consistency allows for potentially infinite possibilities of visions of constructed realities, instantaneously open to re-interpretation and therefore constantly open to re-construction.

SESSION C10 : DYNAMICS OF CONSCIOUSNESS

■ 33. CONSCIOUSNESS MANAGEMENT SYSTEM (C.M.S.): A FEEDBACK-INTEGRATED CONSCIOUSNESS SYSTEM DYNAMICS SANJAY BHUSHAN

Complex dynamical systems are neither completely rigid nor fully random. Instead, they display a unique balance of Integration, Cohesion and Robustness at the global level and at the same time, differentiation and multiple reliability at the component level. In the domain of consciousness too, quantum consciousness reveals a unique phenomenon of Super causality as a sum total of all creational causalities and retro-causalities. We see downward causation, in which upstream determinants at the higher order consciousness levels influence and regulate events at lower levels of human cognitive consciousness. It is also characterised by the dualistic aspect i.e. combination of both the physical act of state reduction and the correlated psychological intentional act or tendencies. And, the most visible physical evidence at the material plane of this subtle mechanism can be found in the present state of the world and the conditions under which men live that can be regarded as the reciprocal causal image of their own individual and collective states of consciousness. In other words, it would be prudent to say that the material world around us is nothing but the physical impression of the collective cognitive minds of the human race as a whole (Global consciousness) which may in turn be the downward impression of the higher level Universal mind.

The basic construct of this paper draws inspiration from the idea of top-down Super causality by examining and synthesizing a galaxy of theories and postulates propounded by eminent quantum scientists and thinkers namely Bohr, Pauli, Heisenberg, Stapp, Godel, Penrose, Hameroff, Laszlo, Davies, Cayce, Campbell, and is also based on some fundamental supreme spiritual proclamations made in the Radhasoami Faith (Religion of Saints: Sant Mat) Scriptures.

■ 55. FRIENDSHIPS, INTIMACY AND EXPANDING CONSCIOUSNESS: THE 'QUALIA' OF SOCIAL RELATIONSHIPS IN WOMEN PRIYA SEBASTIAN

The perception of social reality begins with interactions and dialogues, which create a phenomenological interface of understanding between two or more persons. The perception of social reality is often coloured with an individual's emotion and feeling in larger cultural context. An understanding of 'qualia' associated with maintaining social ties will help us understand the functioning of an individual in the sphere of society. Therefore, this paper attempts to explore the feelings of women associate with their social relationships. The approach used for this study is idiographic in nature. The researcher interviewed four women, who were housewife, an unmarried student, an employed married woman and a lesbian. A semi structured interview was taken, in order to understand the feelings associated with their existent social relationships. A hermeneutic- discourse analysis method was used to interpret the interviews.

The findings of this study suggested the uniqueness of each women's pattern and the importance of relationships, both knowing others and being known to others and to self. Another aspect of meaning described was the challenge of loss and threat to relationship.

■ 109. DEVELOPMENT OF CONSCIOUSNESS MODEL FOR ANALYZING JOB TO BUSINESS DECISION: AN EXPERIENTIAL STUDY

K. SANTI SWARUP, MUKTI SRI-NARAIN

Studies broadly identify two major reasons for entrepreneurship decision. These are personal characteristics and perceptual variables. Subjective perception of one's own skills, likelihood of failure, existence of opportunities and knowledge of other entrepreneurs were proven to have high correlation with the decision to start a new business. It is important to analyse to what extent people are conscious about their choice and the various variables affecting their choice. The scales of awareness may vary from non conscious to Conscious Higher Order Thoughts (HOT). This paper makes an attempt to develop a consciousness model with a hierarchical structure to analyse job to business decisions of employed executives.

A sample of 60 executives at various levels in their respective organisations, who have approached us for advice to start a business, were studied for the purpose of this study. We have used questionnaire to collect data. The analysis of the data thus collected resulted in the development of the consciousness model. The model thus developed identifies the various conscious levels at which the decision to leave the job and start business was taken. This model can assist the potential entrepreneurs to make conscious choice of starting their own business.

■ 265. DYNAMIC OPTIMAL POLICY OF CONSCIOUSNESS MANAGEMENT USING MARKOV DECISION PROCESSES (MDP) FRAMEWORK

T. GURU SANT, ANOOP SRIVASTAVA, SANJEEV SWAMI

In spite of tremendous progress made by the human race, there is a marked discontent among the masses, as a large number of people are struggling for their meaningful existence. With all the resources, scientific discoveries and powers available, humans are unable to live in peace and safety. This may be attributed to the problems of greed, self-focus, selfishness, materialistic approach to life, and so on. Over the years, we may have grown in knowledge and money, but probably not in wisdom and virtue. Perhaps, our trajectory of growth is not in the right direction, and the current scenario might well culminate into a situation of civilisation crisis.

The analysis of modern world crises can be done at the levels of both societies and individuals. As an individual, the person has many problems, such as greed, self-focus, ego, etc. An attractive potential solution to this problem is to provide a mechanism which is scientifically and logically provable to the quantitative minds and by which the individual can progress towards higher levels of consciousness.

There are two potential challenges which need to be addressed when one attempts to develop a methodology for one's journey towards higher levels of consciousness. First is awareness of consciousness level, and the second is that, even after attaining the awareness, an individual might not know the way forward. Some work has been done in the past on these aspects by psychologists, philosophers and social scientists. The existing techniques for measurement of personality traits include psychometric tests, consciousness indices, and IQ, EQ and SQ tests.

In this paper, we offer a novel attempt to combine the teachings of religion and science. We have developed a dynamic optimal policy framework for attainment of higher levels of consciousness using Markov Decision Process model (MDP). MDP is a technique used for optimal policy formation for time based sequential decision making problems. Such normative models are advantageous in prescribing a general policy specification. The current approach is one of the first attempts to apply this technique in the field of consciousness.

■ 461. BUSINESS DYNAMICS MODELLING OF ENTREPRENEURIAL CONSCIOUSNESS : A PROPOSITIONAL INVENTORY

ROHIT RAJWANSHI, MUKTI SRI-NARAIN, KARAN NARAIN, ANOOP SRIVASTAVA, SANJEEV SWAMI

The entrepreneur is an important entity in the foundation and development of firms (Casson, 1982), who organizes and manages with substantial initiatives and risks. The key features of success of an entrepreneur are high level of managerial consciousness and sound business performance. Consciousness pertains to a “state of awareness” (Rao, 2005). Based on extant literature, in this paper, we define the key components of managerial consciousness in terms of Planning Consciousness, Organization Consciousness, Control Consciousness, Leader Consciousness, Ethical Consciousness, Ecological Consciousness and Research and Development Consciousness. In addition, two key measures of business performance, namely Cost and Revenue components, have also been specified.

Together, these nine dimensions have been modeled in a conceptual framework using causal loop diagram methodology of systems dynamics. Sub-components of each dimension have also been identified. Relevant propositions have been derived from the conceptual framework using business examples and case studies. The proposed approach promises to open up several attractive areas of future research in the field of entrepreneurial consciousness.

SESSION C11 : FOUNDATIONS OF CONSCIOUSNESS I

■ 65. THE SPIRITUAL, THE REAL AND THE PHENOMENAL- THE DILEMMA OF A VISIONARY, WHO AM I? WHAT AM I ?

SANTOSH KUMARI SRIVASTAVA, GURNAM SARAN SRIVASTAVA

As early as in the 3rd century BC (ca 428-348 BC) when Plato, the renowned Greek philosopher gave his dualistic theory of Forms that Reality resides not in the concrete objects (e.g. tables and chairs) we perceive with our body's senses but in abstract Forms that these objects represent, he had projected the central thought that Reality is not inherent in any object we see or touch but in the eternal abstract ideas of objects that exist in our minds. By doing so he had set the Gordian knot of the problem posing before great thinkers of the world, the question, ‘what is Real? and how real is the perceived reality?’ During the 20th century and now in the 21st century the question has taken the shape of contentious argument regarding consciousness, the nature of the real and as such of the Supreme Consciousness, its genesis, ontology and the role in human condition.

■ 70. ISSUES WITH THE DEFINITION OF 'UNCONSCIOUS THOUGHT' IN UNCONSCIOUS THOUGHT THEORY

SUMITAVA MUKHERJEE AND NARAYANAN SRINIVASAN

Modes of thought have a rich literature in decision sciences. Debates on the role of attention and consciousness in decision making have always been exciting. In a series of studies, Unconscious Thought (UT) theorists have argued that if attention is distracted away (unconscious thought) from a complex decision, the quality of the choice is better as almost all the information is processed during UT. Results from Unconscious Thought have also been used to argue about the opposing effects of attention and consciousness. Given the theoretical importance of the interaction of attention and consciousness and its effects on decision making, we ask how unconscious thought should be operationally defined and what role does attentional processes play in unconscious thought? Previously, we had argued against the presumption of a large capacity unconscious thought by showing that sub-sampling of information during UT is a possibility. UT theorists also side step important aspects of attention and treat attention as a unitary dichotomous variable. Attention can be conceptualized in multiple ways; as a selection mechanism with different scope (focused or distributed) and as a resource (present or absent). Our lab results show that during the period hypothesized to elicit unconscious thought, focused compared to distributed attention affects the decision task differently. For example, distributing attention (using global navon letters), compared to focused attention (induced by processing local letters) increases the strength of preference in a preferential choice task modeled in-line with the UT theorists. Global processing also results in better memory for the choice alternatives. If attention is not a unitary process, then how 'Unconscious Thought' can be treated as if it is a unitary variable (attention directed or distracted away from the task)? We think that Unconscious Thought Theory conflates lack of attention with unconscious thought. It is possible that the distraction period (unconscious thought) is essentially "distracted conscious thought" rather than "unconscious thought". To our knowledge, there is no evidence yet that distracting attention via an unrelated task as in typical UT studies promotes 'unconscious' processing. As attention and consciousness are often thought to be dissociable and distinct, we argue that their individual roles on decision making require more critical evaluation.

■ 98. THE AWAKENING OF CONSCIOUSNESS FOR THE SUSTAINABILITY OF HUMAN BEING

LAURA ANDRÉA COSTA

This work aims to spread the purpose of Goudishanka Centre for the Development of Being, NGDS, in Brazil, which was created to encourage and motivate us to choose new patterns for the sustainability of human beings. Through community work it focuses on the awakening of the consciousness through four pillars: professionalization – directing people to their real abilities; culture by expressing their creativity; health through the elimination of toxins in physical, mental and emotional levels also changing pre-constructed patterns; and education, paradigm changes for new societies.

The connection to the real-being is characterized by expanded consciousness which is grounded in elements such as self-esteem, prosperity, mastering of emotions, good health, creativity, independence, cooperation, freedom. In this case all life experiences are based on higher ego. But which path leads to this stage of evolution? This path is based on strong motivation and specific experiences for new choices combined with deepening knowledge level. The challenge is to leave the restricted state filled with limitations dominated by low self-esteem and diseases of the mind and body. In this apparent comfort zone, the dominant emotions together with the lower ego guide everyday life in an automatic way

perpetuating patterns and beliefs. Some consequences can be really harmful leading to destructive behaviors such as, for instance, drugs addiction.

■ 155. THE SCOPE OF CONSCIOUSNESS

GARY COMSTOCK

To ask about the «scope» of consciousness is to ask which nonhuman animals, if any, are conscious. Based on behavioral cues alone, nonhuman primates seem to be conscious, but perhaps we are mistaken in this judgment. For if consciousness requires something more than responsiveness to the environment and sentience--if it requires, say, theory of mind (ToM)--and if primates lack ToM, then the complex feelings of consciousness might not extend beyond our species, the complicated behavioral repertoire of other animals notwithstanding.

How would we know whether other animals actually feel the emotions that accompany human consciousness? A strategy to answer the question is to identify the neurophysiological correlates of ToM in humans and then learn whether any animals have homologous structures. Suppose ToM is supported on the left side of the medial frontal gyrus, in the posterior cingulate cortex (Fletcher et al. 1995) and in intraparietal sulcus (Lerner et al. 2011). *Cynomolgus* monkeys have these neural correlates but we do not know whether the structures are active when the animals are exhibiting the (alleged) ToM behaviors. One way to answer this question would be to cause an experimental animal to exhibit the symptoms of social depression, that is, anhedonia, withdrawal, and lack of interest in interacting with conspecifics. Now, with the monkey in the condition where it seems to feel depressed, we might ablate the part of its brain that sponsors ToM in order to discover whether such a procedure relieves its depression. If these structures sponsor ToM, then the animal ought to return to its normal healthy state once the structures are rendered inoperative. If these structures do not sponsor ToM, then the animal ought to continue in its listless condition. Learning the results of such an experiment could have important implications for identifying the scope of consciousness. This paper surveys recent ToM empirical research in nonhuman animals, reaches the tentative conclusion that consciousness extends beyond humans, and argues that critical ethical questions must be answered before researchers are allowed to destroy putative consciousness-supporting structures in experimental animals.

■ 157. MIND OVER MATTER: AN ARGUMENT FOR FUNDAMENTAL MENTALITY

JOSH RASMUSSEN AND JERRY WALLS

We will introduce a new argument for the thesis that at least some mental activity is fundamental. Fundamental mental activity, as we are thinking of it, includes thoughts, feelings, or conscious decisions whose occurrence isn't wholly in virtue of non-mental activity (such as the spins, speeds, or smashing of particles). We offer a dilemma: do people move by virtue of forming conscious intentions, or do people form conscious intentions by virtue of moving? We will motivate the first horn, or something in the neighborhood. We draw attention to certain highly coordinated activities that may seem surprising and unlikely on a completely "bottom-up" picture, where consciousness is entirely a by-product of lower-level physical phenomena.

We aim to advance our thesis by motivating two premises: first, it is gravely unlikely for there to be such events as symphonies—ever, anywhere—if every intentional action is wholly determined by non-mental stuff; second, such events as symphonies are not surprising, not unlikely, if there are at least some intentional actions that are not wholly determined by non-mental stuff. These premises, if true, provide probabilistic evidence for the conclusion that some intentional activities are at the bedrock of reality. We leave open whether there may be outweighing counterevidence.

SESSION C12 : FOUNDATIONS OF CONSCIOUSNESS II

■ 239. REALITY, MIND AND THE UNIVERSE

MAANVI MATHUR, SWAMIPYARI, UMANG VERMA

This paper raises some extremely profound questions which have plagued and prodded the universe since the first emergence of auto-reflectivity within the self-labelled species called human. “Why is there something instead of nothing?” The purpose of this paper is to provide a rational context for the reader to open a non-rational connection to the possibilities that are implied through questioning the nature of the universe, mind, and reality. The questions themselves, almost certainly unanswerable to the rational mind, provide the insights and often self-destruct in paradox before an actual answer can even be attempted. Because of the fundamentality of these mysteries, the entire history of shamanic, religious, spiritual, rational, philosophic, and scientific thought has attempted to contain and work with such questions in an effort to “figure it out” or gain some significant insight into the essence of existence. The extent to which this quest has been accomplished within any of these fields is a question this paper will explore.

■ 240. WHY WE DO THIS AND WHY WE DONT

ELEONORA LOREK

There is a world that we step into, which we learn and live in. It contains colors, scents, music and much more. This is the ordinary world. Through studies in physics and philosophy we can learn to deconstruct this world as real. The objects did not possess color, the birds did not sound and the grass lacked scent. The ordinary world instead appears as a human illusion.

I would like to discuss the quest one sets out for in searching in and around physics for what reality really is. The world which actually is the one that can fulfill our needs as human beings.

■ 271. RETHINKING THE CONSCIOUSNESS AND INTELLIGENCE SINGULARITY

CARL ADAMS

Within the computer science domain, as well as science fiction, there is discussion on the singularity event, the situation where machines achieve a level of consciousness and intelligence equal to or exceeding that of humans. This paper builds on previous work (Adams 2011) to provide a critical perspective on a singularity event by characterising different perspectives on such a singularity. The paper contends that:

- a) It is a moving target. ‘Technological man’ is resulting in expanding human capabilities, both cognitive and sensory. The result is that any convergence is not one sided – human capability in consciousness and intelligence is increasing.
- b) It is not one singularity but multiple singularities. There are many different attributes of human consciousness and intelligence (ranging from various sensory inputs, specific cognitive and processing functions, perception functions and even socialising functions), and consequently there are likely to be multiple singularity events.

c) Singularities should be considered in a wider system perspective. Humans, and human consciousness & intelligence, do not operate in a vacuum. Humans have complex social and organizational structures. They have individual motivations influencing their everyday life. They also have to contend with the dynamic nature of their living environment. Consequently, consideration of any singularity has to factor in the complex wider set of systems of human existence. Comparable conscious machines will have to demonstrate capabilities to deal with an equally complex set of system – though they do not have to be the same as human systems. d) Blending of capabilities inform understanding of consciousness. By taking a multiple-singularities perspective we are able to combine, or blend, different aspects of consciousness and intelligence in a comparison between human and potential machine capabilities. It is likely that some blends will be more significant than others (e.g., different mixes of cognitive functions and sensory functions may be more significant as a singularity event than others).

The paper argues that by revisiting and articulating these attributes of singularity events we are able to better understand what it means to be conscious and intelligent. The paper hopes to make a contribution by extending the discourse on machine and human consciousness.

■ 320. STUDYING CONSCIOUSNESS: PRESENT AND FUTURE

SURAT SINHA, S.P. SINHA

Consciousness means the awareness people have of the outside world and their perceptions, images and feelings (Hirst, 1995), Baars (1997) argued that “consciousness is facility for assessing, disseminating, and exchanging information and for exercising global coordination and control.” According to Pincker (1997) there are three different issues for understanding consciousness - Sentience, Access to information and Self-knowledge. Cognitive neuroscientists and cognitive psychologists have shed little light on the issue of sentience and the origin of subjective experience. Velman's dual aspect theory states that consciousness and aspects of brain activity are two sides of a single underlying process. Dohaene and Naccache's global work space theory states that many brain areas are associated with conscious experience but prefrontal cortex and anterior cingulate are of prime importance. Studies conducted on brain-damaged and split-brain patients show that the conscious perception depends on certain crucial brain regions. The future of brain imaging is very bright because it provides valuable information about where and when the cognitive processes occur. Another approach known as phrenology advocates that various mental faculties are located in specific parts of the brain and are identifiable by bumps on the external skull. With the introduction of transcranial magnetic stimulation it is possible to show that certain brain areas are causally involved in performing a given task. Future studies can amalgamate the results of the scientific studies (third-person perspective) with those of religious saints (first person perspective) to make it a complete interpretation of consciousness relating it to spiritual consciousness.

■ 389. QUAN-CIOUSNESS? IS CONS-CIOUSNESS NOT ENOUGH?

C.M. MARKAN

Neuroscientific or classical approaches to consciousness or ‘Cons-ciousness’ such as those proposed by Koch and Crick among others, assert that most observable phenomenon are understandable within the existing neuroscientific domain treating quantum theories as superfluous. Penrose-Hameroff and von Neumann-Stapp, on the other hand, argue that quantum theories of consciousness or ‘Quan-ciousness’ are better equipped to deal with the phenomenon of consciousness. Some of the major arguments revolve around duality, free

will and qualia which are difficult to comprehend within the classical domain. Despite the interest in Quan-ciousness there is no denying that experimentally observed phenomenon are real and substantial, while quantum phenomenon are largely difficult or impossible to observe or measure. Therefore, efforts have been made to reconcile the two diametrically extreme positions and find mechanisms through which causal reality of Cons-ciousness and explanatory power of Quan-ciousness could co-exist till a more comprehensive framework is in place. However, even before such a framework is evolved it is important to understand the reasons why the two approaches exist and why only one was not enough. Cons-ciousness correlates neural synchrony in gamma frequency range as the basis of conscious experience. This experience can be subliminal / preconscious or conscious according as whether the synchronized neural assembly can grow 'large' and 'loud' enough to attract attention. P-H's Quan-ciousness theory lays emphasis on identifying the microtubulin as the microscopic entity that could exhibit the quantum behavior and then they systematically build a framework to explain how cytoskeleton of tubulin proteins could form a cellular automata that acts as a quantum computer which when orchestrated by sensory stimulus goes into a superposition of multistates. Consciousness occurs at the point of objective reduction or wave function collapse to one of the conscious states due to quantum gravity. von Neumann-Stapp on the other hand attribute Quan-sciousness to the uncertainty at the microscopic level of ion channels leading to superposition of larger number of macroscopic potentialities which collapse to a observed conscious state. P-H treats the collapse to conscious state as a random or more specifically a non-algorithmic process. Despite accepting the uncertainty in the choice of conscious state, vN-S invoke a mental force a.k.a. Quantum Zeno Effect in quantum mechanical parlance (or a spiritual force in William James (1892) view) to let this conscious state prevail lest it may fade away. Collapse appears to be a universal phenomenon associated with quan-ciousness that occurs as decoherence in superposition of potentialities irrespective of what causes this collapse. It is important to endure this collapsed state or 'template for action' for an extended period of perhaps tens or hundreds of milliseconds in order to be able to bring into being the coordinated sequence of neuron firings needed to produce the intentional feedback. Thus the neural correlate of an intentional act is something like a collection of vibratory modes of drumhead in which many particles move in a coordinated way for an extended period of time. Such states tend to endure as organized oscillating states, rather than quickly dissolving into a chaotic disorder.

SESSION C13 : EASTERN PHILOSOPHY I

■ 11. TOWARD A COMPREHENSIVE EAST-WEST THEORY OF BRAIN, MIND AND REALITY

PAUL EVANS

The western scientific mainstream, firmly embedded in reductionistic-materialistic models, has challenged the legitimacy of traditional Eastern approaches to understanding consciousness. Eastern models are criticized for ambiguity and philosophical tenets incomprehensible to the scientific West. Even among the Eastern scientific community interdisciplinary collaboration between science and time-honored Eastern approaches to healing and consciousness expansion is rare. However, over the past several decades, pioneering genetics research has shown a wide spectrum of genetic mechanisms, once thought to be pre-determined by the genetic blueprint, now appear to be under

the influence of epigenetic transcription factors that can be activated by sound, light, touch, breath, electromagnetics, stress, diet and thought. These findings suggest a closer relationship than previously seen between science and traditional Eastern consciousness models that emphasize mental intent, breathing, meditation, touch, relaxation, sound-vibration and nutrition. This paper presents the major experimental evidence and proposed mechanisms of these interactions, as well as the principal obstacles lying in the way of a viable, comprehensive East-West theory of Brain, Mind and Reality. Preliminary hypotheses based on this evidence are presented and possible directions for future research are suggested.

■ 53. THE SCIENCE OF SUMIRAN AND IT'S BENEFITS

NEHA S, ANJOO, PREETI SINHA

The repetition of mystic dhunyatmak shabds have an effect on the levels of consciousness experienced by the soul. This can be explained scientifically. Dhunyatmak shabds, though they cannot be produced by speech, store their secret in the mechanism of producing the same. A focussed and concentration upon this mechanism bring to the mind the form of the sound. Such repeated and focussed effort works akin to the a tuning fork which repeatedly struck in the vicinity of an already vibrating tuning fork eventually produces resonance. The effect of this resonance is the fine tuning of the physical, mental and spiritual faculties of the body/mind/ spirit of a practitioner. This creates the ascent of the spirit to experience higher levels of spirituality in the consciousness of that higher region. This paper explains with scientific experiments on different groups of people, how the repetition of mystic word further aided by a holistic lifestyle helps them achieve higher levels of consciousness and the physical manifestation of that fine tuning on the body and mind.

■ 67. CREATIVITY AND COSMIC CONSCIOUSNESS IN THE EASTERN DEVOTIONAL TRADITION

SANJAY PRASAD, DEEPA PRASAD, DHARAMPAL SATSANGI

Creative action (call it Right Action) is an Ordained Action that is in harmony with Ordained Duty and leads to eradication of past impressions (Samskara) stored in the Cosmic Mind (Manas). This steadies the mind and facilitates attention current to gain communion with the Primordial Sound Current to attain Cosmic Consciousness. Scriptures of the Radhasoami faith and the Bhagvad Gita are two classic religious doctrines in the Eastern Devotional Tradition that set forth in precise and penetrating words the path of “devotion through creative action” (Karma Bhakti) that leads to Cosmic Consciousness.

The only way in which a great scripture can become a practical classic to guide mankind is when it teaches spirituality that can be lived, here and now. Radhasoami faith is a modern faith of the devotional school where the statements of eternal truth and Cosmic Consciousness are presented in the scientific accent of our times. Scientific, not because of some scientific data that can be perceived by our three dimensional senses but, because of its logical belief system. Based on the teachings of the Bhagvad Gita and Radhasoami faith , this paper endeavors to elucidate “creativity in action” (Right Action) leading to cosmic consciousness.

■ 72. A VEDIC APPROACH TO THE THEMES OF TSC 2013

ROBERT BOYER, PARK HENSLEY

The nine themes of the 2013 Toward a Science of Consciousness conference in Agra, India are briefly addressed from the Vedic perspective that emphasizes the ultimate unity of nature.

This paper shows how cutting edge quantum models are converging on the Vedic 3-in-1 ontology: the ordinary finite physical level of classical physics; the subtle finite, nonlocal, non-physical level including mind that is beginning to be identified in quantum physics; and the completely unified field or totality of nature within which the finite levels emerge. The Vedic model addresses challenging dilemmas in the progress toward subtler theories of matter, energy, and information to the completely abstract unified field, providing a coherent framework for the relationship of matter and mind to consciousness. It has huge implications for understanding the origin of the universe, mind-body problem, 'hard problem' of consciousness, medical healing technologies, and how to extend scientific epistemology to direct empirical validation of subtler levels of nature in their ultimate unified basis.

■ 82. DEFENDING COMPLEXITY: A SAMKHYA APPROACH TO THE HARD PROBLEM

E. ALEXANDER HOWE

Taking seriously the assumption that the east and west can fruitfully be put into conversation, this paper places Classical Samkhya in conversation with the philosophy of David Chalmers in order to provide a novel solution to the «hard problem» of consciousness. Chalmers' own solution to the hard problem privileges information and posits a fundamental principle called the double-aspect theory of information. According to this theory, all information has two aspects: 1) the familiar physical aspect and 2) an additional phenomenal aspect. Chalmers has thus made experience an irreducible feature of the world. However, while this approach is promising, it seems to commit Chalmers to a sort of panpsychism. In fact, Chalmers himself concedes that his account would permit some sort of phenomenal experience to a thermostat. We will use Samkhya to demonstrate how we can retain the double-aspect theory but avoid the counter-intuitive conclusion of panpsychism. We are not principally opposed to panpsychism, and it is worth noting that scholars such as Galen Strawson and Gregg Rosenberg have defended forms of panpsychism. However, we argue that Chalmers' own insistence on it is predicated on a logical fallacy (or two).

SESSION C14 : EASTERN PHILOSOPHY II

■ 222. BEAUTY CONSCIOUSNESS IN THE MUSICAL VERSIFICATIONS OF THE GHAT RAMAYAN

AGAM KULSHRESHTHA

The term "Beauty consciousness" denotes the sense of beauty realized in the sublime regions of intrinsic human experience. A renowned German scholar namely Boum Garten (1750) established the theory of Aesthetics. In Indian Perspective, musical existence along with its beauty consciousness is found to have been originated in Samved and in other religious scriptures. Aestheticism is one of the branches of philosophy. Modern thinkers consider it to be a science instead of philosophy. Beauty embodies the effusions of attraction, belongingness, reliance, grace and a deep urge along with untold association

with oneness. Like Plato and Aristotle, Plotinus also accepts the existence of consciousness in beauty. Beauty is the authentic existence. There are three aspects of beauty consciousness - Cognitive or Intellectual, Emotional, Affective or Urge-oriented. Mainly, there are three creations of Saint (sant) Tulsi Sahab. Ghat Ramayan, Shabdavali and Ratansagar. The Ghat Ramayan stands for not only absorbing the whole cosmos into our inner but also inculcating the spiritual thinking and transcendental journey. The poet has been successful in painting the varied aspects of consciousness through various prosodies and versified musical effusions, leading to the highest regions of sublimity as well as consciousness. Mortality of life and approach to the Supreme being have been narrated well in the Ghat Ramayan. Some of the verses have been composed in classical Ragas and Talas or rhythmic cycles, and some of them have been composed in folk music also.

■ 329. SANT MAT: PATH OF THE ULTIMATE SPIRITUAL CONSCIOUSNESS

ANAND RAO D

Consciousness is the quality or state of being aware of an external object or something within one's self. It is a person's subjective experience of the world and the mind. Earlier scientists worked with external experience in physical space and this consciousness developed concepts of external objects and processes. Mind is a parameter of the inner worlds and Consciousness of inner worlds leads to Eternal Happiness. This paper, starting with simple explanations of Religion and Sant Mat, attempts to show that the consciousness of the matters of the inner world/worlds depend upon the spiritual advancement and with proper meditational practices one may achieve Ultimate Spiritual Consciousness and enjoy everlasting Supreme Bliss, Supreme Energy, Supreme Intelligence, and Supreme Refulgence of the Supreme Being. Sant Mat preaches simple and easy Meditational Practices within the easy reach of all human beings, to achieve Ultimate Spiritual Consciousness.

■ 330. THE CONCEPT OF CONSCIOUSNESS IN KASHMIR SHAIVISM AND ITS COMPARISON WITH ADVAIT VEDANTA

MADHUNANGIA MADAN

The concept of Consciousness was a subject of study of the Indian rishis and their adbhikari students in the olden days. Today, the concept of Consciousness Studies has caught the attention of scholars from all over the world and there is a class of Spiritual –Scientists who are trying to take this concept to the masses. This is because, in the age of technology, the human intellect is not willing to follow a religion which professes rituals, superstitions, and is dogmatic in nature. The need of the hour is a Universal Religion which shows man, who is potentially divine, the method of self- actualizing and raising his Consciousness to a level whereby he reaches a state of Superman-hood.

The Concept of Consciousness has been conceived by different schools of Indian Philosophy beginning from the school of Charvak which has the most elementary idea of Consciousness, to Kashmir Shaivism which seems to be the most advanced in its interpretation of the concept of Consciousness. The Advait Vedanta existed ages before Sankaracharya was born. He was, however, one of the last representatives of Advait Vedantic School of Indian philosophy, and which culminated in the final interpretation of the Vedas. It advocated the philosophy of Non-Dualism of Reality: "That thou art" i.e. that Immanent One is the same that is in the human soul. Kashmir Shaivism is also Non-Dualistic in its interpretation of Consciousness.

However, both the schools are still different in their approaches of expressing the concept of Consciousness, understanding which and working towards which, is Parmartha- the supreme goal of life of a human being. An attempt has been made in this paper to discuss the concept of Consciousness projected by Advait Shaiva School of Kashmir and to compare it with the view of Consciousness expressed by the Advait Vedantins of Sankara School.

■ 339. ADVANCED STUDY IN THE ESSENCE OF SPIRITUALITY IN THE RAGAS OF HINDUSTANI AND CARNATIC MUSIC SYSTEMS

BINATHI GUNTY

Essence of spirituality is that concept which is liberated from physical entity, beyond the limitations of human comprehension and which is elevated to transcendental spheres or spiritual sublimity. The rendition of ragas transports the artist and the audience's mood from appreciation of art to experience pure bliss and unalloyed joy of spiritualism. Every raga has its own essence in the internal form that enables anyone to develop oneness with the Supreme Being like "Saramati, Abheri, Sindhu Bhairavi" etc., in Carnatic music system, and "Gurjari Todi, Bhairavi, Yaman" etc., in Hindustani music are studied that portray Bhakti rasa in their swar-sangatis. Interviews with domain experts and teachers regarding their Spiritual experiences with ragas have been conducted to support the idea, which has been already presented in TSC2012.

The present study enhances the potency of Spirituality in various Ragas by rendering them, which is followed by a questionnaire that includes the experiences and opinions of learned artists. The objective here is to highlight spiritual essence with statistical evaluation based on the opinions of artists which make the study more supporting and authoritative.

■ 415. QUANTUM VIBRATIONAL THEORY OF CONSCIOUSNESS INSPIRED BY EASTERN SPIRITUAL TRADITIONS

SUKHDEV ROY

Eastern spiritual traditions and quantum physics envision all creation is based on energy and vibration. According to eastern spiritual teachings, consciousness is of the nature of Sat-Chit-Ananda, i.e., Truth, Intelligence and Bliss. Recently, in the Radhasoami Faith, the August Supreme Being, the Supreme Consciousness has been further elucidated as Param Sat-Chit Prem Anand Prakash Shabda Anhad Nada Swarupam i.e., of the form of Supreme Truth, Intelligence, Love, Bliss, Refulgence, the Original Mystic Name, the Resonating Unstruck Sound. It is explained that a great spiritual current issued forth from the Supreme Being at the commencement of creation accompanied by a sound due to vibrations in this spirit emanation. It is though this name, which in articulate speech conforms to Radhasoami became the first manifestation of the Supreme Being at the time of creation through which He revealed Himself and ever since then, this name is reverberating, resounding everywhere in all directions. Subsequently, after creation of pure spiritual regions, the spirits got blended with mind in the region of the Universal Mind (Brahmanda) and later with mind and gross matter in the Physical Region (Pinda). Manifestation from other spirit forming centres was accompanied by respective spiritual sounds that also continue to reverberate everywhere since then.

SESSION C15 : THEORIES OF CONSCIOUSNESS

■ 61. A CONCLUSIVE CONCEPTUAL FRAMEWORK FOR CONSCIOUSNESS: ROADMAP FOR THE DEVELOPMENT OF A FUNDAMENTAL THEORY

JOACHIM KEPPLER

In this talk, we discuss the advancement of a conclusive conceptual framework for consciousness, which was presented at the TSC 2012 conference and is specified in (Keppler, 2012). The framework constitutes a novel synthesis of Western and Eastern insights with the goal to prepare a solid scientific grounding for a theory of consciousness. It is based on three essential cornerstones: physics, neurophysiology, and Eastern philosophy. The physics part builds on stochastic electrodynamics (SED), a theory that provides a deeper understanding of quantum systems and reveals the fundamental organizing principles behind matter, which are dominated by the existence of an all-pervasive stochastic radiation field, the zero-point field (ZPF). According to SED, the properties of quantum systems are emergent phenomena that result from the interaction between the system components and the ZPF. Whenever this interaction reaches a stable equilibrium (a stable attractor), a system-specific information state is generated in the ZPF. These fundamental principles run like a common thread through the conceptual framework. The neurophysiological body of evidence (long-range gamma synchrony, scale-free dynamics, stochastic resonance, abrupt phase transitions, adaptive attractor landscapes) clearly suggests that the brain is governed by a universal stochastic driving force and behaves like a macroscopic quantum system. Hence, the functionality of the brain rests upon the above-mentioned principles that are characteristic for every quantum system. A rigorous comparison of these principles with the wisdom of Eastern philosophy, whose insights emanate from a complementary knowledge acquisition process, sheds new light on the nature of consciousness, indicating that the phenomena of quantum physics and consciousness have a common basis and that matter and consciousness bear on one and the same fundamental substrate. This substrate is the ZPF whose unique properties make this field an eminently suitable carrier of primordial energy as well as primordial consciousness. According to the conceptual framework discussed here, our individual consciousness is the result of an interaction process involving the brain and the ZPF. Whenever the neural activity reaches a stable attractor, the brain modifies the ZPF and causes an information state in the ZPF, which is associated with a conscious state. In other words, the external aspects of these ZPF information states are physical and manifest themselves as the neural correlates of consciousness (the stable attractors), while the internal aspects of the ZPF information states are phenomenal and are experienced as conscious moments.

■ 87. AN INTROSPECTIVE VIEW TO CONSCIOUSNESS: APPLYING 'MASLOW'S NEED THEORY' TO CONSCIOUSNESS

MAHARAJ SARAN, SUMATI VUPPULURI, GURU SARAN

'Consciousness' is defined as a term that refers to a variety of aspects of the relationship between the mind and the world with which it interacts. Most theories relate it to subjective awareness. Research has slowly progressed from doubting the concept studies to defining the conceptualization to the latest theories on artificial neural networks and Artificial Intelligence where digital computational programming is being used to simulate consciousness. Recent research with brain waves during meditation has shown a distinct difference between those

corresponding to ordinary relaxation and those corresponding to meditation. Study of conscious awareness is the latest area where emphasis is being laid.

Across the world, human happiness index is falling and India being the cradle of human race in many a matter ranging from knowledge and culture to religion & civilization is not featuring in the top. While the reasons to ponder are galore, few areas where the individuals are lagging behind is in the understanding of the concept of happiness and the derivatives involved in achieving the same. If we observe the classical concept proposed in the Abraham Maslow's "Hierarchy of Needs" model (1943) which was formulated as a framework of human motivation we see that every individual inevitably can be associated to fall in each layer of the pyramid, and in turn progresses stage wise to a higher need/ motivation. Now the problem area for the research is how do we decide on the time frames to be spent in each framework? If only one stage is achieved, whether or not the individual should revisit the same at a later point in life due to competition? Also Maslow's theory has a limitation in not explaining the concept of consciousness, and the impact of the same in framework model to achieve higher order needs, although he talks about self actualization at the pinnacle of the pyramid. Happiness being a subjective concept having a 'relativity' variable attached to it (reality- expectations) has always been chased and pursued hard since times immemorial and wisdom or inner awakening dawns upon an individual when the same is not achieved as per the desired standard. While theorists say the inner wisdom or awakening had always been there to sense the reality, if only proper measurement criteria were available to identify the awakening, or define the so called intuitive consciousness. So problems are galore and solutions are limited. In this multitude of ills and issues, man has the option to exercise his subjectivity of the wisdom gained over a period of time through varied methods to decide and prevail over the situation to achieve an objective solution. This necessarily can happen by virtue of the strength of his / her consciousness. This is an experiential study on human values, the consciousness theory and is based strongly on experiential learning to identify, define 'true happiness' and various methods applied in achieving the same.

■ 188. THEORIES, CONSTRUCTION AND CAPABILITIES

RICHARD D GILL

Theories, scientific philosophical or others, must be constructed from a combination of language, mathematics and logic. Here we will ask if there can be elements of the universe that are forever outside the scope of any theories that can be constructed or that things can exist that cannot be properly captured by these theories. The aim of theories is to bring greater understanding about ourselves and the universe in a general way. Physical theories have a generality so that, for example, theories about the carbon atom apply to all carbon atoms in the universe. Mathematics, on which the physical sciences are based, also has a generality that exists over all space and time. But is it possible to have a theory about a particular object such as a particular stone or dog?

■ 375. CHALLENGES AND PROGRESS IN STUDY OF CONSCIOUSNESS

RANDHIR TIWARY, PREM PYARI TIWARY

Modern scientific approach based on classical physics has resulted into earthly, manifest understanding of consciousness contrary to mystical other worldly deep revelations in

various religious scriptures. Studies by neural scientists' report on the process of brain states during various rational and emotional states of mind but there are no definite relations between those states and the experience. No computer has duplicated the human mind and its consciousness. Significant is the contribution of psychologists in categorizing three levels i.e. conscious, subconscious and super conscious. Social scientists have a theory of consciousness based on group conditioning, regional and time period basis. A select few scientists have attempted to explain consciousness with their knowledge of quantum physics by theorizing random choice and integration of observed cognitive functions using quantum method. However collapsing of quantum wave functions poses measurement problems and is mysterious and so is measurement of consciousness. However all above is operational explanation of consciousness but not the entity consciousness itself.

Consciousness has been traditionally considered a metaphysical entity to be approached and experienced through process of many meditation techniques having regional variation depending upon the adepts who popularised it. The tragedy is that all these techniques of achieving higher level of consciousness have limited benefit for the common masses and are restricted to mere progress in physical and mental levels but do not ascend to higher spiritual planes. The path of Love as revealed by mystics (Sant Mat tradition) is the latest in the evolutionary cycle that leads to a much higher state of consciousness which was never experienced in earlier times and has given a new hope to mankind. The most important thing is that this path is possible to be followed by all and those who adopt it; there is unconditional perennial guidance from an adept in human form who is well versed with the secret of the path that leads to Ultimate pure consciousness.

■ 417. RATIONALE FOR CONSCIOUSNESS IN BUSINESS ORGANISATIONS

MADHURI MALHOTRA, SAMEER MALHOTRA

There is a remarkable change in business principles and practices, such as transformations from hierarchical structures to team-based structures that empower employees, from analytic justification to creative problem solving, from competition to cooperation, and from an emphasis on physical assets to an emphasis on human resources as a company's most valuable resource. In their search for ways to explain these phenomena and to trigger them in companies where they have not yet occurred, leading consultants and writers have begun to speak of growth of consciousness as a key element underlying these transformations (Blanchard, 1993; Koestenbaum, 1991; Maynard and Mehrrens, 1993; Weiss, 1994). This shift in paradigm or mind-set is indicated as a «new management consciousness» (Joiner, 1994). The new paradigm has many aspects, but its foundation is that consciousness is causal and that the power of the individual psyche is far vast than we could have previously imagined. Leading thinkers suggest that consciousness affects individual and organizational functioning. A business organisation is viewed from a perspective of the dynamic process of consciousness. Consciousness is described from the materialistic (Little, 2002), dualistic, socio-cultural and the transcendental viewpoints. The present study proposes to throw light on the role of consciousness in business organisations, various levels of organisational consciousness, and discuss the idea of collective consciousness in business organisations.

SESSION C16: QUANTUM INFORMATION AND CONSCIOUSNESS

■ 51. OBJECTIVITY AND SUBJECTIVITY IN QUANTUM MECHANICS

JOHN SMALL

We commonly believe there exists an objective reality 'out there' independent of us as observers. However quantum mechanics challenges this notion, there appears to be some facets of reality which depend on the observer. This has so far led to unsuccessful attempts to create an observer free theory of quantum mechanics. We argue that the no-cloning theorem allows us to be more precise about what we mean by 'objective reality out there' in terms of objectivity as information which can be copied, shared and hence exist independently any observer. The corollary is that because quantum information cannot be cloned and therefore cannot be shared and can't be said to exist outside an observer's state of knowledge. We agree with Caves, Fuchs, and Schack and also with Srednicky that quantum probabilities are best understood as states of knowledge in the Bayesian sense rather than states of nature. The fact that quantum systems permit physical states which can represent states encountered in self-referencing logic suggests that we are dealing with states of knowledge about the observer as well as external systems. This opens up the potential to understand quantum measurement as a process updating an observer's state of knowledge about both an external reality and at the same time knowledge of their internal state.

■ 303. QUANTUM HEBBIAN LEARNING: A QUANTUM APPROACH TOWARDS FEATURE MAP FORMATION

PRITI GUPTA, CM MARKAN

This paper proposes Quantum Hebbian Learning that appears to have potential to explain the formation of brain wide feature maps. The proposal is inspired by Penrose-Hameroff's quantum approach to consciousness that assumes that sub-neuronal microtubules form a quantum computer whose collapsed states are conscious experiences manifesting in the form of an activated neural assembly. A correlation/entanglement of microtubule cytoskeleton results in synchronous firing of the neurons. The synaptic weights, between the neurons participating in the synchronously firing neuronal assembly, get reinforced according to whether their microtubule activities are correlated/entangled. Since entanglement can occur even in absence of a physical connection, therefore this model can be extended to incorporate learning at different levels of neural interaction i.e. between nearby connected neurons, far away connected neurons, and far away neurons that are not physically connected. Quantum Hebbian learning also offers an exponential speed-up to the weight updating process by means of superposition and quantum parallelism.

■ 342. CLARIFYING QUANTUM CONSCIOUSNESS

S PRAKASH

This paper aims to clarify the need for a quantum approach to consciousness. While we present no genuinely new ideas, we hope to build a consensus on the eminent plausibility of a quantum approach to consciousness by reviewing work of Henry Stapp, Roger Penrose and Chris Fields.

David Chalmers has convincingly argued that a satisfactory solution to the «hard problem of consciousness» would at least require the addition of some fundamental postulates about the existence and nature of subjective experience to the body of «fundamental physical laws» currently accepted by the scientific community. These additional «psycho-physical» laws would have to be consistent with currently accepted «physical laws», or more precisely, the results of the vast array of repeatable experiments on which our belief in currently accepted physical laws is based. Adding meaningful psycho-physical postulates to classical physical theories appears impossible. Any attempt based solely on classical information seems problematic because information, as defined by Shannon, is a measure of uncertainty and classical uncertainty is inherently subjective. For Laplace's demon who, at a given instant, knows the exact position and momentum of every particle in a classical universe, there is no uncertainty and hence no notion of information. Roger Penrose and Stuart Hameroff have suggested an alternative quantum approach to consciousness that involves the introduction of an objective gravitational reduction mechanism to close the causal gap associated with measurement. Comparing their (often under-appreciated) ideas to the more orthodox «von Neumann/Stapp» approach is instructive and points the way to third-person experimental tests of quantum theories of consciousness.

■ 462. PROTEIN POLARIZATION INDUCED BLOCH WAVES IN AXONAL FIBRES

KANAD RAY, RITU AGARWAL, L.A. CACHA, R.R. POZNANSKI

The major problem of cognitive neuroscience is to understand how and to what extent our behavioural processes are governed by the workings of brain and nervous systems. To understand the subjective mental processes in a meaningful and quantitative way a new level of description is needed. Of late a trend has emerged to study different forms of cognition in terms of their neural-oscillation correlates. Questions have been raised whether the combined and synchronous actions of neurons and its constituents can explain the underlying mechanism of cognition. A theoretical perspective on neural oscillations at multi-scale level would indeed be important. Oscillations are of very much functional significance when we talk about large scale phenomena. It has been argued before that techniques familiar in the study of transmission line can be used to analyze large-scale spontaneous dynamics of cortex yielding Bloch waves. The Bloch waves could be treated as a continuum in dynamic responses of discrete cells where the continuity would arise from the Bloch concept. An electro-dynamical cable theory of protein polarization in dendrites gives travelling wave solutions. In this paper we are investigating the protein polarization induced Bloch waves in axonal fibres.

■ 463. GRAPH THEORETIC QUANTUM SYSTEM MODELLING FOR NEURONAL MICROTUBULES AS QUANTUM HOPFIELD NETWORKS

DAYAL PYARI SRIVASTAVA, VISHAL SAHNI, PREM SARAN SATSANGI

This paper extends the computation of Hamiltonian (or Lyapunov) Energy Function through graph theoretic quantum system modelling (GTQSM) in continuum of protein heterodimer tubulin molecules of self-assembling polymers, viz., microtubules in the brain as Quantum Hopfield Networks (QHN). It attempts to represent graph-theoretically the elemental interaction components (or processes) of tunneling interactions and Coulombic bidirectional interactions in Quantum Hopfield Network (QHN) for micro-energy function generation in generic terms for N qubits each with n discretization points of imaginary time or inverse temperature. The quantum input ports are in cascade and parallel interconnections

with each other while the classical output ports are all interconnected in parallel. The paper presents an insight, otherwise difficult to gain, through graph-theoretic quantum system modelling (GTQSM) construct into the computation of tunneling micro-energy functions and Coulombic micro-energy functions which are assembled as Hamiltonian (or Lyapunov) Energy Function.

SESSION C17 : GROUP TECHNIQUES I

■ 54. AWARENESS AND EFFORT TOWARDS MEDITATION AND ITS ROLE IN DEVELOPING INTUITIVE ABILITIES: A MANAGERIAL PERSPECTIVE.

RUPALI DAS, TARUN SRIVASTAVA

Meditation is a practice which provides tremendous physical, emotional, mental and spiritual benefits. The importance of Meditation has now also been realized in the field of management. This exploratory study focuses on (1) awareness towards meditation and time spent on meditation by managers (2) role of meditation in enhancing intuitive abilities among managers. The pilot study reveals that many managers are aware of the benefits of meditation and thus they do practice meditation. The major reason for not doing meditation is lack of time due to fast and stressful life. The primary and secondary data in this study reveals that managers use both Systematic and Intuitive decision making styles at their work. In case of risk and uncertainty the intuitive ability of managers helps in making fast, accurate and confident decisions. This research highlights the importance of Meditation in developing right (subconscious) side of the brain which helps in enhancing intuitive abilities among managers.

■ 69. REFLECTIVE LEARNING AS A TOOL FOR ENHANCING CONSCIOUSNESS: AN EMPIRICAL STUDY OF NON-GOVERNMENTAL ORGANIZATIONS(NGOS) IN AGRA, INDIA.

K. SANTI SWARUP, SUDHA RATNAM

As human beings we all have experienced learning. We learn at all stages in our life. Humans learn not only through external stimuli, their natural reactions to these stimuli {Second Order Thoughts (SOT)} but also through introspection and retrospection about all these reactions. The capacity to exercise introspection and willingness to learn more about the fundamental nature, purpose, essence, behavior is termed as self-reflective learning. Reflective learning results in {Higher Order Thoughts (HOT)} and increases consciousness in self. The purpose of this paper is to identify if executives in Non-Governmental Organizations (NGOs) which are basically formed for the social welfare, actually do this introspection and learn from their past decisions under various situations and use that in the future situations faced by them. For this study we have approached 20 executives of Non-Governmental Organizations (NGOs) in Agra and applied Reflection-Rumination Questionnaire (developed by Trapnell and Campbell 1997) The results indicate that executives use reflective learning as a tool for enhancing their consciousness and decision -making skills.

■ 174. MEDICAL-ESOTERIC DECISION SUPPORT SYSTEM FOR UNIVERSAL (GROUP) CONSCIOUSNESS

PREM KUMAR SAXENA, PREM PRASHANT, FATEH SINGH

The basic element of Radhasoami Faith is the practice of Surat-Shabda-Yoga i.e. uniting the Spirit with the Spiritual Sound Current that emanated from the Ultimate Reality. This spiritual practice is to be learnt from the Perfect Sant Satguru of the time by developing affection and love and therefore faith in Him. This research paper presents the design of a “Medical-Esoteric Decision Support System for Universal (Group) Consciousness”, which has been developed with symbiotic approach to achieve the aim of furnishing the esoteric query support, medical diagnostic support and esoteric decision exchange support functions, through appropriate Medical- Esoteric Decision Making Communication Infrastructure Interface Tools and Principal Medical-Esoteric Information Processing and Analysis Elements. The Medical-Esoteric Decision Support System (ME-DSS) is comprised of six main components– Model Base Management System, Medical-Esoteric Data Base Access and Management System, Central Medical-Esoteric Vision Navigator Board, Medical-Esoteric Vision Technology Base, Dialog Management System and Medical-Esoteric Decision Making and User Desk.

■ 178. USE OF INTUITIVE CONSCIOUSNESS IN INDUSTRIAL CREDIT GRANTING DECISIONS OF INDIAN PRIVATE AND PUBLIC SECTOR BANKS

SWATI KHATKALE

This study has tried to find out the factors that are looked at by Indian Banks, while granting Industrial Credit. There are various tools to assess the credibility of the borrowing organization, e.g. balance sheet & profitability analysis, ratio analysis, security, NPV etc. Many economists have used Multiple Discriminatory Analysis to predict, whether a company will pay back the loan or will default in future. Altman's Z score mode is one of them. Credit Rating Agencies (CRA) across the world have developed various statistical models to measure the credibility of the borrowers. Based on those models, CRAs have classified borrowers into various categories from AAA to D indicating lowest probability of default to highest probability of default. Though US and other International Banks have followed the latest statistical models, they had higher default rates in comparison to Indian Banks. The subprime crisis was one of the examples of it. So a survey of 32 Indian Banks out of 48 Indian Public & Private Sector Banks was conducted to find out, what made Indian Banks more resilient than US Banks. It was found out that apart from doing the statistical & financial analysis of Balance sheet and Profit and Loss account; they have focused on qualitative aspects also, which are hard to define. These qualitative aspects generally came out during the plant visit of team of Bankers, interaction with management, facial expressions of the managers, seeing product/ service quality, perception of consumers etc. These intuitive abilities help them to look beyond numbers and the past success, and they are better able to predict the credibility and character of the borrower. As a team takes the decision of granting credit, intuitive ability and eye for details is consciously passed from senior managers like Vice President, Credit to Assistant Managers. This forecasting ability helped them to avoid a large number of defaults.

■ 209. EFFECT OF MEDITATION IN CREATIVE PROCESS: AN EXPERIMENTAL STUDY IN NEW PRODUCT DESIGN

SUMITA SRIVASTAVA, ANKIT SAHAI, JYOTI KUMAR ARORA, SANJEEV SWAMI, DAYAL SARAN MISHRA

The studies by neuroscientists indicate that meditation improves executive functions, such as the cognitive processes like planning, attention, innovation and creative problem solving. The executives perform these activities routinely in an organisation. Meditation helps an individual to screen out irrelevant information, to clear out his/her mind of distractions, and to focus intently on relevant stimuli. This frees up cognitive resources to solve problems. Prayer, meditation, and contemplation are the kinds of spiritual exercise that lead individuals to a deeper will and purpose. In the light of the extant research in this area, we attempt to examine the potential connection between meditation and creative ability of product designers. The purpose of this study is to demonstrate the effects of meditation on creative process in product design using data from an experiment study. The study was conducted on 107 product designers divided into four groups following different meditation protocols. The present experiment is primarily an attempt to verify the hypothesis that the performance of the participants going through any of the meditation session protocol would be better than the participants following no meditation protocol. The study also observes some interesting results of the experiment with reference to the participants belonging to different groups following different meditation session protocols. There is a significant difference in the performance of participants who have been practicing meditation on regular basis and the participants who are meditating instantaneously (for this exercise only). This experiment extends the existing research on spiritual theory of management.

SESSION C18 : GROUP TECHNIQUES II

■ 335. THE MOST UNCOMMON COMMON INDIA - AN ORIENTAL PERSPECTIVE ON SES (SOCIO-ECONOMIC-SPIRITUAL) MODEL OF CONSCIOUSNESS AND ITS TRANSITIONS

SAURABH MANI, ARTI MANI

Righteous way of livelihood, Righteous way of sensual pleasure and Realization of Ultimate Truth has been the core ethos of Indian way of life and living that is evident from variety of oriental scriptures and literatures. On a deeper analysis of Indian (oriental) philosophy of material life and attainment of highest level of consciousness and its manifestations in real life practices, we find that the miraculous co-existence of material aspects of life and spiritual goals of human endeavor are complementary than contrandictory. Constant and regular interactions and inter-relations of material and spiritual dimensions of life highlight the Uncommon India which is still visible in its vivid forms across the Indian sub-continent. The quest for realization of ultimate reality (super consciousness) through material pursuits has been one of the most common element of Indian teachings. Over a period of time, the nature and meaning of inter-relations among social structure, economic goals and spiritual journey has remarkably altered.

This paper aims at analysing three core dimensions, i.e., Social, Economical and Spiritual and their inter-dependence, of SES (Socio-Economic-Spiritual) Model that was peculiar to India and its transitions over a period of time. This paper further tries to search for answers to questions like «Whither are we wandering?» and «Do we need to go back to the future?». This paper draws inspiration from Dayalbagh Approach to SES and discusses the nature of interactions between material and ultimate consciousness.

■ 344. INTERVENTIONISM OF CLASS-CONSCIOUSNESS IN THE LIFE OF CONSTRUCTION SITE WORKERS IN INDIA: A PHENOMENOLOGICAL APPROACH

POORNIMA JAIN, DEEPIKA CHAUHAN, GAURAV SHARMA

This study focusses upon the life of construction site workers in India based on the phenomenological approach that explains the interventionism of class-consciousness present among them. The work culture of any construction site is usually characterized by informality, face-to-face relationships, alienation, role- competition, gender-inequality, arduous work etc. Consequently, construction workers project relationships, values and norms from their work into their non-work lives. The objective of the study is to evaluate the social and economic status of the construction workers employed in the unorganized sector and to determine their level of class-consciousness. It means that the socio-economic status of the construction workers depends upon the level of class-consciousness present in them and vice-versa, which in turn leads to vertical mobility in their life. It thus represents the fact that in order to ameliorate the social and economic status of the construction worker, there is a need for existence of class-consciousness among them which in turn suppresses the injustice and exploitation done to them by the employers/ contractors. The study is relevant in contemporary context as it helps in consciously awakening the construction workers about their rights and class-consciousness which in turn improves the socio-economic status of the worker and to raise a voice against the exploitation done to them.

■ 388. CONSCIOUSNESS IN PUBLIC ADMINISTRATION: ANCIENT AND MODERN PERSPECTIVE

SUNITA SATSANGI, PARUL VERMA, PRIYA SINGH

Inculcating Values rather than Ethics has become a global concern these days. Real transformation as a true human being can bring about a sustainable impact towards Good-Governance. Values emerge spontaneously and effectively only from a purified mind, and the mind becomes purified when one is conscious of one's acts and when one can distinguish between right and wrong. The inward movement of consciousness or introspection is very important for maintaining balance in life. While Ethics can ensure outward desired behaviors, they create internal mismatch and conflict, if the inner disposition of the doer is not consistent with the act. However, if sound values are inculcated internally, the outside actions become voluntary, spontaneous and self-motivated. Naturally, such actions will be more effective, humane and wholesome in nature. This paper will provide further details on how consciousness impacted administration in Ancient Era and in the Modern Era. This paper will deal with different aspects of Indian philosophy and its practice for self-growth towards Holistic Competence, so important for Good Governance as well as self-Governance.

■ 390. HOMOTOPY OF CATEGORY THEORY OF CONSCIOUSNESS

AARATHI KOTHALANKA, D PANDEY

Category theory is a new approach for establishing a link between mathematics and perennial philosophies, which correlate quantum logic and quantum superposition. Category theory expresses quantum classical correspondence and self-referent ability of quantum states allowing them to express information about quantum jump sequence. The generalized space time theory describes the creation of presheaves and the sheaves through the functor defined between the reference category and the target category. The target category is a global collection of objects due to mathematical theory of differential equations termed as the sheaves theory. An object of it is called element which is usually considered to be the thought of mind as well as will of course the thoughts are selected by the Presheaf from the reference category to target category by the action of a homotopy function. Purpose of this paper is to describe the homotopy as a learning function to improve the status of consciousness to achieve the ultimate reality. During this study we will discuss the action of homotopic function on functors this is the cause of creation of objects in category theory. More over since the whole process involves the non-linearity of the function, it is proposed that uncertainty theory will be instrumental for the determination of status of consciousness.

■ 433. INTUITION, CONSCIOUSNESS AND CORPORATE DECISION MAKING

NAGESH PYDAH, PREM SEWAK SUDHISH, B AASHIQ

Decision making is a critical component of the corporate business world and is well accepted both as an art and as a science, to be practiced intensively. Good decision making is considered to be the hallmark of a true leader requiring vision and a certain degree of hands-on knowledge, to understand the ramifications of the decision. Most decisions are taken under circumstances with an element of uncertainty – with not all of the information required available at the time of decision making. However, it becomes imperative to decide with the uncertainties at play to not let the moment of business opportunity pass, waiting for complete information to arrive. While it is evident that not all such decisions would be

considered perfect in posterity, this is acceptable as a one-off situation in order to not stifle innovation in the organisation. The unwritten code in most businesses is that 'it is better to be roughly right and fast than exactly precise and slow'. In this paper, we attempt to study the science behind decision making and the role of intuition in the process. An Intuitive decision is a combined result of an individual's experience and consciousness. Several studies in the past indicate that the moment when individual confronts a dead end with no solution in sight and feels helpless, the subconscious presents simple yet elegant solutions either in a dream or like a bolt of lightning. While a valid explanation for this phenomenon is being investigated, religiously inclined individuals attribute it to Divine Intervention. This paper attempts to study intuition from a scientific perspective through analysis of several available case studies and by also combining the wisdom of the vast body of knowledge available through the literature on eastern philosophies in general and the tradition of the Saints in particular.

SESSION C19 : LANGUAGE AND CONSCIOUSNESS

■ 68. ENANTIOSEMY IN LANGUAGE AND THE STATUS OF OPPOSITES IN EXPERIENCE

MAXIM STAMENOV

The standard way to distinguish between different objects by the means of language is to give them different names. In this paper, I will discuss the nature of the enantiosemy as a way to identify opposites in experience and behaviour, that as if contradicts what we find as self-evident – to make difference in the world, we need different words with different meanings. We find this peculiar semantic phenomenon in cases where we have words that have two senses with contrary or contradictory meaning. Enantiosemy was discovered at the end of XIX century simultaneously by the Czech Vikentij Shertsl and the German Carl Abel. Even if we orient today much better both into the nature of both language and mind, the hypotheses originally offered by these two authors still remain a challenge and the evidence raised pro and contra them does not prove that the discoverers were wrong in their basic intuitions. This is the case as far as our current knowledge can link on a phylogenetic scale the evolution of language to the evolution of thinking and consciousness, as well as when we identify and distinguish opposites in our experience in consciousness as compared to the way of their processing in the unconscious.

■ 113. THE RELAXING POWER OF REPETITIVE SPEECH

AVIVA BERKOVICH-OHANA, AMOS ARIELI, RONI KAHANA, RAFAEL MALACH

A dominant concept in human cortex research has been the notion of antagonistic networks in which activity in one set of areas is linked, in a push-pull manner, to inactivation of another (Fox et al., 2005; Golland et al., 2007). Here we show that this is not a general rule, and in fact, significant cortical inhibition can be induced by minimal cortical activation. Intriguingly, this phenomena occurs under repetitive inner speech, a condition known to be associated with relaxation promoting its role in ample meditative practices (Cahn & Polich, 2006). Thus, our results provide a neural mechanism underpinning the relaxing impact of monotonous speech. Methods: 23 participants (eyes-closed) were asked to switch between

resting state (RS), repetitive speech/mantra (MTR - silently and slowly repeating the word «one») and a verbal task (verbal fluency - VF) in an fMRI experiment. Nasal respiration was simultaneously measured in 12 participants. A thorough phenomenological questionnaire concerning experience during RS and MTR was administered to another group of 30 participants. Results: MTR deactivates DMN regions compared to RS, as well as the brainstem and right insula. Additionally, MTR activates verbal regions compared to RS. However, this activation was small compared to VF. There were no breathing differences between MTR and RS (Figure 3). Phenomenologically, MTR reduced both DMN-related experience (thoughts and self-reference) and extrinsic-system related experience (sensations of body and surrounding). Conclusions: This fMRI study reveals that a simple word repetition task produces a wide spread reduction in the Default Mode Network - a major cortical system linked to intrinsic processing. This reduction was significantly below the baseline rest condition. Importantly, the inhibitory effect was linked to a minimal positive activation in language cortex. It is conjectured that the widespread reduction in brain activity - particularly of the DMN - may be linked to the sense of relaxation and «empty mindedness» associated with this task.

■ 212. «CONSCIOUSNESS, INTUITION AND SENTIENCE: WHAT IS AN AUTHOR?»

MALVIKA GUPTA

Today, the belief in there being a 'singularity', or a point in human history when machines surpass human capabilities (Vernor Vinge and Ray Kurzweil), is held as an object of serious and ponderous theoretical and philosophical inquiry and discussion (David Chalmers). Amongst a certain section of intellectuals, this term seems to hold the key to the future of the human race or rather, the end of it. Yet, in light of recent advances in human scientific understanding of consciousness (Stuart Hameroff and Sir Roger Penrose), this mode of thought is considered to be unhelpful and, in fact, misleading to earnest searchers and seekers of Truth, Reality, and Ultimate Consciousness. Rather, consciousness, in this paper, is viewed as being non-material and beyond physical constructs (Professor P.S. Satsangi). Specifically, the area of human authored literary textual creation (literature: novels, poetry, plays etc.) versus the computer generated authorless narrative or text is examined. Focusing on the concept of computer generated authorless narratives and texts, the question of "What is an author?" is revisited, as it relates to human creativity and writing exploring the necessity of consciousness, intuition and sentience as requisites to the creation of meaningful literary texts.

■ 213. NARRATING THE ENIGMA: A LITERARY APPROACH TO CONSCIOUSNESS

SONAL SINGH, RAM SINGH

Consciousness is not just a simple phenomenon to be studied in terms of objective data. No single discipline or approach can grasp the elusiveness of nature of consciousness. Besides the areas of inquiry like the relationship between mind and brain, reality and illusion, etc., there has always been a challenge of evolving new modes of expressing different levels of experience of consciousness. Human consciousness neither follows a set linear model nor a logical pattern. It is rather disjointed and free- associative. It is an extremely difficult task to translate the abstruse material into a physical image. Literary artists have been studying and representing consciousness phenomenologically for a long time. Literature has very often provided the exteriorization of different levels of consciousness. Different tools and techniques have been employed for expressing this varied, subjectively lived experience. The present paper endeavors to discuss Recapitulation, Flashback, Tense uniformity,

Symbolism, Interior monologue, Free- association, Montage, Poly- temporal time shape, etc., which are some of the major techniques employed by the literary artists to give expression to the ever changing internal facets of the complex human life.

■ 361. 'COSMOS, THEOS , SELF AND INTENTIONALITY' +IN BECKETT'S ABSURDIST WAITING FOR GOD 'O'(T) : A STUDY IN CHRISTIAN EXISTENTIAL CONSCIOUSNESS, CONSCIOUSNESS OF THE UNIVERSAL MIND AND ULTIMATE CONSCIOUSNESS OF RADHASOAMI FAITH

BANI DAYAL DHIR,V PREM LATA

The paper examines how science of consciousness intersects with 'arts' with special reference to theatre. It appropriates stage as a cosmic space where consciousness is manifested through actors' spatiotemporal experiences and the corporeal processes , where states of consciousness become operational with actor –spectator experience, creating an interface between the “self” and “world”. Shakespeare conceptualized life as a process constantly subjected to theatricality “ all the world's a stage , and all the men and women merely players : they have their exits and entrances ; and one man in his time plays many parts ; his acts being seven ages.” Performance is “consciousness in action” which results in reinvention of 'self' through self-realization and reformation. Phenomenology, when employed as a theoretical and methodological approach to analyze the dynamics of consciousness in theatrical praxis, enables us explore the way we are subjects in the world.

The paper takes up the pressing issue of existential necessity of 'self creation' through the theatrical system and argues how Beckett's Waiting for God(o)t is a depiction , not of a place but of a cosmic state ; entire humanity involved in, how cosmic man's fall and alienation from 'Theos' results in 'split self', 'divided or fragmented ego' in Freudian sense, taking spiritually paralyzed man to fragmented and hysterical altered states of consciousness, without his being aware of it. Laced with psychological, spiritual and philosophical references ,the mode of analysis would be transpersonal - from actor's self (object's self) to spectator's self (subject'self) to show how out of such 'theatrical cosmos alienated from Theos' are born moments in which the spectators experience heightened cosmic consciousness. Spiegelberg observes that subjectivity sometimes focuses on the things being experienced , while some focus on the person experiencing it. Thus 'Beckett's cosmos' pervaded by angst acquires an entirely new meaning in the perceptual experience of the spectators.

The authors also appropriate 'Beckett's cosmos' with the “life world”, a concept of Phenomenology developed by Husserl, Heidegger and Maurice Merleau Ponty, which refers to the world as directly experienced in the subjectivity of everyday life, distinguished from objective world of science.

“Intentionality” the central notion of Phenomenology, suggests that whenever there is consciousness, then it is always consciousness of something. It is a state of mind to represent objects or state of affairs. The endeavor would be to analyze from generic perspective , without getting entangled in the debates concerning these focal phenomenological notions , how “absurdity” induces “intentionality” in the spectators through “non-intentionality.” The paper establishes Waiting for God'o'(t), as a 'redemptive text', communicating through 'non-communication' the path to achieve higher consciousness, path to salvation by searching for Supreme God, the only Savior and the Greatest Benefactor of mankind which find exposition in Christian Existentialism, Vedas and Upanisads and Oriental Religion of Saints (Radhasoami Faith).

Taking Waiting for God'o'(t) as theatrical system for transcendental investigation, the discussion will take within its purview the levels of consciousness revealed in Christian

Existentialism, Upanishads and Oriental Religion of Saints (Radhasoami Faith). Referring to Most Rev. Prof P. S. Satsangi's elaborate scientific explanation of "Triple Hierarchies of Consciousness" and "Supreme Consciousness" as revealed in Radhasoami Faith, the paper would design a comparative paradigm to assess the three states of consciousness of Christian Existentialism, Four levels of Consciousness explained in the Upanishads with reference to Consciousness of Universal mind, to draw parallels and illuminate the sublime concept of "Ultimate Truth" and "Ultimate Consciousness" as revealed in Radhasoami Faith. Key words: Phenomenology, Theatrical cosmos, self, intentionality, Christian existential consciousness, consciousness of the Universal Mind, Triple hierarchies of consciousness, Supreme consciousness of Radhasoami Faith.

SESSION C20 : PHYSICS AND MATHEMATICS OF CONSCIOUSNESS

■ 27. ORGANIC METAPHYSICS AS A FRAMEWORK FOR UNDERSTANDING CONSCIOUSNESS.

JOHN PICKERING

Over the past few decades enthusiasm for the rapid progress of cognitive neuroscience has obscured its limitations. These are shared by eliminative neurophilosophy and underlie a commonly made explanatory mistake. This is to treat psychological states, such as experiencing a moral dilemma or having an emotion, as if they were little more than activity in a particular area of the brain. The paper will begin by showing why this is a profound logical error and why the proper treatment of neuroscientific findings requires a richer view of the human phenomenon. Such views are available from other traditions of thought. Buddhism, for example, offers a detailed conceptual scheme in which to situate both the objective and the subjective aspects of mental life.

The paper will examine whether Buddhist terms for conscious experience are expressible within the contemporary scientific worldview. It will conclude that they are, but only up to a point. Beyond that point, terms and concepts cannot be made to correspond without distortion or over simplification. However, both Buddhism and the scientific worldview constantly change. Recent work in biology and in semiotics is taking forward the organic metaphysics of A.N. Whitehead and suggests that the key to interpreting neuroscientific findings lies in revising our understanding of matter. Within this metaphysical framework, mental and physical phenomena are treated as different aspects of a single underlying reality.

The paper will conclude by sketching this framework and suggesting that adopting this framework will make it easier to integrate neuroscientific findings with the facts of personhood as they are commonly experienced. To do so will promote a more informed interaction between Eastern and Western approaches to the phenomenon of consciousness.

■ 100. INTENTION EXPANDS TIME: A DURATION JUDGMENT STUDY USING TEMPORAL BISECTION

MUKESH MAKWANA, NARAYANA SRINIVASAN

Intention plays an important role in our day-to-day life. It not only determines the nature of our actions that are performed to achieve those intentional goals but also may potentially influence our perception of events to a great extent. Studies on Intentional Binding have shown that the subjective awareness of onset times of the voluntary action and its effect is attracted towards each other, thus compressing the duration between the two. However, it is not clear how the perception of an event or an object is influenced by whether the intended event or object occurred or not. In the current study, we investigate a specific perceptual aspect, namely the duration of an intended or unintended object. We used the temporal bisection task to estimate duration judgments. Before the main experiment we trained the participants on two anchor durations one short (300 ms) and other long (700 ms). Then in the main experiment we asked participants to make a choice about what color target (red/green) they want to see in each trial by pressing a pre-specified key. The probability that the participant would see the intended color was set at chance (50%). In a given trial, the participant might see the object with intended color or unintended color. The perceptual task, that is, the duration judgment was independent of the color of the stimuli. Once they pressed the dedicated key, a target appears on screen after a delay of 250 ms. The duration of target stimulus was varied randomly in the range of 300-700 ms in steps of 50 ms. Participants reported whether the particular test duration was closer to the short or long anchor duration which they learned in training session. The data from the intended and unintended conditions were fitted with a psychometric function and the point of subjective equality (PSE) was computed. Results from the experiment showed that when participants get the intended target, their subjective awareness of duration increases significantly compared to when they get the unintended target. The results show that intention expands the duration of the intended perceptual object or goal. Perceivers do not merely process incoming stimuli but perception also depends on achievement of the intended goal. They are not only prediction machines but also intention machines. Further experiments are needed to shed more light on the role of intention, both at the level of perceptual goal and the nature of action performed to achieve the goal in the perceptual awareness.

■ 202. EXPLORING MENTAL TENDENCIES TO MODEL FUZZY CONSCIOUSNESS VECTOR FOR PEACEFUL CO-EXISTENCE: A FUZZY COGNITIVE APPROACH

S. K. GAUR, D.S. MISHRA

Throughout the course of this and earlier centuries, human life has been revolutionized. Our technological success is awe- inspiring. One can, on one hand, explore the limitless dimensions of space and on the other, peep into nano-sized particles. However, the recent widespread attack of terror, racial fanaticism and fundamentalism has made us aware that humanity is at war with itself. The war is on at every front of its existence, be it extremes of poverty or wealth, population explosion, crime, hunger, global warming and the like, leading ourselves to a wilting state.

The authors have tried to establish the roots of all such crises in the minds of individuals. On the basis of various words of wisdom, written down by persons of uncommon wisdom, certain important tendencies of mind like revenge, selfishness etc has been complied. A fuzzy cognitive map based on causalities have been developed. The authors have put forth the causal model with mental tendencies as the concept in understanding relationship between action, tendencies and the resulting level of consciousness. Consciousness being a subjective and complex phenomenon has been visualized on the framework of experiential knowledge as a fuzzy relationship between gross and subtle activities, positive and negative

tendencies and consciousness. A fuzzy consciousness vector has been obtained and evaluated through action-tendency-consciousness- interface by way of fuzzy relationship. A set of domain experts were consulted to give mapping relationship from activity domain to consciousness domain. A simple case of individuals has been analyzed and their consciousness level evaluated. The paper concludes through the exploration of causalities as to how training of minds with the help of imbibed culture and values and a perfect master can lead towards increasing capacity of consciousness and thus can contribute towards achieving peaceful coexistence as a solution to remove civilizational crisis that the world is facing today.

■ 280. NATURAL FRACTAL PATTERNS IN THE REALM OF SCIENCE OF CONSCIOUSNESS

ANAND MOHAN, PREM PRASHANT

Nature has always preserved and presented an unblemished documentation with perfection down the geological timeline. From sea shells, arrangement of leaves around a stem, the arrangement of a pinecone and spiral galaxies to the structure of human lungs, the patterns of chaos are all around us. The Spiral appears everywhere in nature, from the micro to the macro. The universe at the cosmic level looks exactly the same as at the subatomic level. The design is essentially symmetrical. These repeating patterns are Fractals. The mathematical beauty of fractals is that infinite complexity is formed with relatively simple equations. Inherent in the geometry of fractals is the creation of ever-repeating, self-similar patterns nested within one another. It is this principle of oneness underlying all geometry that permeates the architecture of all forms in its countless diversity. Often referred to as the thumbprint of God, fractals bring the power of nature, creation and geometry to the forefront. We elaborate with examples from fossils kingdom which explicitly demonstrate that the tale of evolution is complimentary to saga of repeating patterns. The shell design of extinct Cephalopod fossil is quite similar to the chambered Nautilus. They had attained perfection in the geometry of the shell size, regularity of shell coiling, suturing on the cells. Their shape is aesthetically pleasing due to the mathematically proportional dimensions. The suture lines in Late Jurassic Ammonite fossils have a tendency over time to become very complex, almost like the leaf of a fern. These kinds of shapes have been linked to fractals. Ammonite suture lines are reminiscent of a fractal - a fragmented geometric shape that can be split into parts, each of which is a reduced-size copy of the whole. The Ammonite shell is formed in a Fibonacci spiral. The spiral follows a mathematical formula: $F_n = F_{n-1} + F_{n-2}$, where each number in the sequence is the sum of the previous two. Constructing a series of squares with lengths equal to the Fibonacci numbers (1,1,2,3,5, etc) and tracing a line through the diagonals of each square forms a Fibonacci spiral. The flawless design in the Nautilus shell contains the Golden Ratio. The shells of most mollusks grow in a logarithmic spiral manner. Ratio of the length of the short side to the long side is always $1 : (1+\sqrt{5})/2 \rightarrow 1:1.618$. This golden ratio is perhaps the foundation for how nature brings balance into this world.

■ 340. SPIRITUAL ENERGY THEORY-SET, A THEORY OF CREATION OF UNIVERSE AND CONSCIOUSNESS AND ITS REPRESENTATION BY BOND-GRAPH THEORY

MANI SUNDARAM

This paper presents a spiritual energy theory of creation and consciousness (SET), which can solve hard problems of consciousness and of order in the Universe. It is a systems view and a holistic view of reality. As such it takes all aspects of reality i.e. spiritual psychological and physical into consideration and sees interrelation among them and explains parts or sub system of the system in relation to whole system. Again, it is a top down approach.

SESSION C21 : RELIGION AND MEDITATION

■ 34. A STUDY IN PANPSYCHISM WITH REFERENCE TO BECKETT'S WAITING FOR GODOT, THE BOOK OF JOB AND PARAM GURU HUZUR MAHARAJ'S NIJ UPDESH AS A RESPONSE TO DARREL W. RAY'S THE GOD VIRUS: HOW RELIGION INFECTS OUR LIVES AND CULTURE

GUR PYARI JANDIAL

Panpsychism declares that all matter in the entire universe from the largest planet to the smallest particle or wave is to some degree sentient or conscious. In other words, the substance of the universe is composed entirely of Mind or Consciousness. Baruch Spinoza regarded both mind and matter as simply aspects (or attributes) of the eternal, infinite and unique substance he identified with God himself. Today leading edge science supports Panpsychist beliefs. Some of the more open-minded scientists such as Stuart Hameroff and Roger Penrose have subscribed to some degree of panpsychism, by suggesting that matter may indeed be sentient. There is now a growing willingness by other scientists to consider the strong likelihood that all particles, no matter how small, have some type of awareness or mind, and that the information connecting them is everywhere. In the post-WW II world in which Samuel Beckett's *Waiting for Godot* emerged, questions concerning the meaning of human existence, the purpose of the suffering involved, and the value of striving for transcendence of mere survival were prevalent. The play focuses on the individual's basic circumstances rather than the ideological make-up of his social identity. It explores the reality of the mind and its direct contact with phenomenal experience prior to the interpretive strategies of any particular narrative. In other words, the fundamental experience of what it is like to be conscious of our existence. Each play of the Theatre of the Absurd addresses this basic phenomenon.

■ 43. IMPROVISATION, MEDITATION, AND INTERSUBJECTIVE CONSCIOUSNESS: A NON-DUAL INTEGRAL PERSPECTIVE

ED SARATH

Is consciousness solely an individual phenomenon or might an intersubjective or collective dimension of consciousness exist? Utilizing principles of an emergent worldview called Integral Theory as a lens, this talk examines this question by drawing parallels between two seemingly unrelated phenomena in which practitioners report heightened experiences of collective wholeness. The first is improvised music, wherein group settings performers describe a profound merging with other performers and listeners. Second is group meditation, where participants commonly recount similar experiences of collective oneness. Studies that suggest large gatherings of meditators may radiate a harmonizing influence on their surroundings resulting in reduced crime, accidents, and illness supports the idea that this is more than merely a sense of oneness between individuals, but in fact involves the enlivenment of a genuine collective dimension of consciousness. Drawing from my forthcoming book, *Improvisation, Creativity, and Consciousness: Jazz as Integral Template for Music, Education, and Society* (SUNY/Albany 2013), I probe possible inner mechanics by which intersubjectivity is invoked in both realms.

■ 64. ESCHATOLOGY: A PERSPECTIVE FROM RELIGION AND SCIENCE

SOMAYAJULU NEMANI, MADHULIKA NEMANI

Eschatology is the study of final events or ultimate destiny of humanity. The Oxford English Dictionary defines it as «the department of theological science concerned with the four last things: Death, Judgment, Heaven and Hell». From a mystical point of view, it is the union of individual or ordinary reality with the Ultimate reality. Eschatology can be seen from both individual and cosmic levels. On the individual level, the end of physical life or survival of individual consciousness and its extended existence is called Individual Eschatology. In other words, individual eschatology describes the last things of one's personal life such as death, the afterlife experiences rewards and punishments, and the reality of the human spirit or soul or consciousness. Many religions have substantiated this fact through their literature and clearly defined the stages and steps with lights and sounds elements as spirit transcend upwards. Scientific research is also in progress in this field to uncover the mysteries of life after death. Dr. Hawkins, 'map of Consciousness' uses Kinesiology to uncover the perceptions of life and God. On the cosmic level, the set of principles about the end of world or Apocalypse is known as Universal Eschatology. It explains 'end time of universe' and the Ultimate destiny of mankind. Many eastern and western religions have presented elaborate descriptions on the subject by stating the stages and time for complete dissolution of the world. Modern day scientific theories such as Schrodinger Equation, Quantum mechanics, String theory and Richard Maurice Bucke's 'Cosmic Consciousness' also tries to uncover the mysteries about the beginning and end of the universe. The paper emphasizes on comparative study of micro and macro level Eschatology concepts and ideas from religion and science point of view. Do scientific analysis re-authenticate religious revelations and Ultimate Truth doctrines or discovers new dimensions to unfold mysteries of individuality and Ultimate Reality? The paper highlights important questions like what is real death? Is brain death and real death one and the same? What happens when brain stops functioning but other organs still functions for life support? What is cosmic dissolution? The research recommends awakening of one inner self to realize the experience of meta physical levels of consciousness while living the physical life.

■ 308. RELATIONSHIP BETWEEN MEDITATION AND PERSONALITY

SUDHIR SAHNI, RENU SAHNI

Very few studies have been conducted exploring the relationship between meditation and personality. This study is an attempt to fill this lacuna. Many tests of personality are available, such as Myers-Briggs Test Indicator, Socionics schemes and Singer Loomis Inventory for Personality, and most of these are based on Jung's typology. According to Jung, there are two basic attitudes (extraversion / introversion), and two pairs of dichotomous functions (Sensing / Intuition and Thinking / Feeling). Sensing and Intuition are irrational functions, while Thinking and Feeling are rational functions.

Many questions arise, such as: Are irrational types more inclined to practise meditation than rational types, or vice versa? Are Introverts more inclined towards practising meditation than Extraverts? Are Intuitive types more interested in meditation than Sensory types? Are Thinking types more inclined towards meditation than Feeling types or vice versa? Further, does the practice of meditation bring about a change in a person's personality?

The present study investigates these aspects. The sample consists of persons who have

recently started practising meditation as well as those who have been practising it for a long time. A Socionics test is used to determine their personality type. The findings of this study, juxtaposed with results of neuroscience research, will be useful in actively probing the mind-brain interconnections, leading towards a psycho-physical theory of consciousness.

■ 395. CONSCIOUSNESS AS PER CHRISTIANITY, ISLAM AND HINDUISM

ANUJ CHANDRA, ANJALI SINHA

Many near death experiences describe a long tunnel with a light at the end – characterized by beauty and serenity. In some cases angels, loving relatives or friends are visualized. Feelings of love, happiness and peace are also sometimes described. These experiences characterize atheists and followers across faiths and geographies. Is this an elevation of consciousness which one experiences at the time of death? Can one experience such higher levels of consciousness before death? A higher level of consciousness is generally associated with enhanced attention, perception and a sense of oneness with the divine. While religions that stress on meditation, like the Religion of Saints and Buddhism, teach that controlled elevation of consciousness is possible by practicing meditation, it is however not well understood where other major religions stand. We have attempted to study what the three major religions of the world namely, Christianity, Islam and Hinduism reveal about their beliefs on higher levels of consciousness.

SESSION C22 : CONSCIOUSNESS AND SOCIAL SCIENCES I

■ 41. CONSCIOUSNESS IS CENTRAL TO THE FUNCTIONING AND THE OBJECTIVE OF THE UNIVERSE

SANDEEP GUPTA, GUR SAROOP SOOD

‘Consciousness’ is a natural phenomenon. While on one hand it binds the entire creation in a definite structural hierarchy, on the other it serves as a ladder for man to access the highest level of bliss, wisdom, intelligence and creativity. Traditional ancient wisdom and in particular the Eastern wisdom (Vedanta to Sant Mat) is replete with information about the nature and dynamics of the various dimensions of consciousness. Consciousness can be said to be the mind of the creation and the central point of human experience (panpsychism). Campbell states that ‘consciousness and energy are somehow the same thing’ and ‘consciousness does not originate in the head, it is only inflected by the head in a certain direction’. However, modern science due to its penchant to reject anything and everything that has subjectivity attached to it, views consciousness to be a mere biological function.

■ 163. THE NIGHTMARE OF SLEEP PARALYSIS: FEAR OF DEATH AND AWAKENING OF CONSCIOUSNESS.

OREET REES

Known as Isolated Sleep Paralysis (ISP)—or Awareness during Sleep Paralysis (ASP) – the so-called nightmare of sleep paralysis manifests as an inability to speak or to move the trunk,

limbs, and/or facial muscles, a paralysis that is actually a characteristic of REM sleep. Accompanying the paralysis is a sense of being awake and feeling terrified, and the felt presence of a malevolent entity in the room, often sexually threatening as well. Sometimes there are other visual, auditory, and tactile hallucinations. Due to the intense terror ISP induces, the phenomenon has been widely reported, as subjects seek conventional medical treatments and/or psychological help. It is emphatically reported as a terrible, overwhelming and mysterious nightmare. ISP has also recently attracted the attention of the neuroscience community in posing fundamental questions regarding conscious experiences in sleep and their relation to underlying brain activity.

In this audio-visual presentation, we will briefly explore some of the historic background of sleep paralysis which has been documented as early as Hellenistic times, and known to this day throughout many different cultures. Contemporary fundamental questions regarding the 'real' versus the 'imaginary,' perception contrasted with imagination, and consciousness versus mere brain activity will be addressed. As someone who has experienced recurrent ISP for over 30 years, I place my personal experience and the known research data at the intersection of Neuroscience, Depth Psychology and Eastern philosophies. Could the so-called nightmare of sleep paralysis be a built-in mechanism of the brain that confronts the aware self's fear of death or/and an opportunity for a shifting of consciousness?

■ 200. COLOUR CONSCIOUSNESS-AN INSIGHTFUL JOURNEY

RADHIKA SETH, MEENAKSHI KUMAR, PARUL BHATNAGAR

Consciousness lies in the deep inner state of mind guiding our work, our life, and the universe at large. It empowers the choices we make about what we do, who we are, and what would be our ultimate objective. With the conscious awareness a perception can be presented in a creative and artistic form which gives us way to reality. It can also be understood by an example of "Art". Art is something that stimulates an individual's thoughts, emotions, beliefs or ideas through the senses. Art as an expression of conscious thoughts with various artistic mediums like paint, movement, structure, melody and language can be said that right from the construction or creation of a thought to its implementation and finally its reception by other persons, the whole process consists of a conscious movements, considered as elements of art or design, with which we get familiarized with our regular conscious efforts. The most prominent element of artwork or design is colour. Colour awareness affects our conscious and subconscious mind and can even have positive impacts on our life. It can inspire us to discover more about ourselves. Colours can inspire, motivate, encourage, demoralize, dishearten, increase enthusiasm, desire and can generate feeling of affection, tenderness or self-assurance. Every individual colour has some or the other type of emotion and energy associated with it with different levels of consciousness and plays a vital role in stimulating our consciousness levels.

■ 207. TOWARDS THE CONSCIOUSNESS OF THE MIND

HARI COHLY, DAVENDRA CHATURVEDI, HUI CHU TSAI

The objective of this study was to investigate the energy (current) levels of the forehead. The 4 points under consideration were the points that were found lying in the imaginary line that lies along the sagittal section of the body which divides the body into the left and the right side of the body. The two equipments that were used to generate this data were Mead using the chinese meridian points and the equipment developed by DEI called DEIMEAD. The subjects used were from Singapore and India. A linear relationship was observed in both instances with more skewdness in the data collected from Singapore versus the data collected in India. It can be concluded that there is a gradation of energy levels between the

different points along the longitudinal axis of the mid frontal sagittal plane with the highest energy being at the top end of the forehead compared to the energy levels of the region of the spirit being the third eye.

■ 226. HUMILITY AND SINCERITY MAKES A LEVEL-5, GREAT LEADER: TRUE HUMILITY, SINCERITY & LOVE FOR LORD IS AN ENLIGHTENED SOUL

YOGESH NARULA, DEEPAK SACHAN, SANDHYA NARULA

The paper covers two important aspects, the first one for all business senior level managers who look forward to taking up the challenges in their respective business/ industry to become the future leaders/CEO's. The second aspect is for any human being who would like to make use of his precious human frame by utilizing the hidden internal powers bestowed by All Merciful Supreme Being.

For becoming a great leader, sincerity and determination apart, the quality identified for giving the best output result of human resources is humility. In order to accept this quality, as rightly identified by management experts/ gurus like Jim Collins, one needs to have a right understanding of self. A renowned consciousness researcher and psychiatrist Dr. David Hawkins had developed a map of the levels of human consciousness where each level of consciousness coincides with determinable human behaviors and perceptions about life and God. The motive of success and belief of getting better sustaining output helps a leader to keep his upper mind strong and thereby remain in the consciousness level identified by David Hawkins as fairly high (350) . All achievers, successful leaders have been identified by David Hawkins in the range of top zone of lower power.

SESSION C23 : CONSCIOUSNESS AND SOCIAL SCIENCES II

■ 341. A CONTINUUM OF ENLIGHTENMENT IN ADULTS?

JEFFERY MARTIN

Non-symbolic experiences have been reported for millennia and are generally attributed to spiritual and religious contexts, although atheists and agnostics also report them (Newberg, d'Aquili, & Rause, 2001; Newberg & Waldman, 2006, 2009). Popular terms for them include: nondual awareness, enlightenment, mystical experiences, peak experiences, transcendental experience, the peace that passeth understanding, unity consciousness, union with God, and so forth (Levin & Steele, 2005; MacDonald, 2000; Thomas & Cooper, 1980). Most are temporary, but some individuals report a persistent form of them (Butlein, 2005; Levin & Steele, 2005; Maslow, 1970, 1973; Travis, Arenander, & Dubois, 2004). Persistent non-symbolic experience involves a fundamental change in the experience of what it is like to perceive the world.

Over the past 6 years our research project has sought to map this experience in over 1000 adults who report persistent non-symbolic experience (PNSE). Methods used included 6-12 hour semi-structured interviews, a wide variety of gold standard psychometric measures,

physiological measurement, and experimentation. Five core, consistent categories of change were uncovered: sense-of-self, cognition, emotion, perception, and memory. Participants' reports formed clusters in which the types of change in each of these categories were consistent. Multiple clusters were uncovered that formed a range (or continuum) of possible PNSE experiences.

■ 368. PHILOSOPHY OF PRODUCTION AND CONSUMPTION OF DAYALBAGH PRODUCTS CONDUCTIVE TO AWARENESS OF SOCIAL RESPONSIBILITY AND SPIRITUAL AWAKENING OF INDIVIDUALS

MEENAKSHI S SWAMI, GUR PYARI PRAKASH, SWAMI PRAKASH SRIVASTAVA

Production, marketing as well as consumption choices practiced today create schism between haves and have-nots through pricing policies, high advertisement costs and modes of advertisement. This creates undue disturbances in the mind and the surrounding environment. Equity in terms of bare necessities is important for an equitable and satiated society to enable spiritual progress. Production and marketing paradigms should be governed by an elevated level of consciousness, a conscious level to serve people at large as has been done by Dayalbagh industries for decades, unlike the profit motive of today's modern business. Production in Dayalbagh started with the purpose of making Dayalbagh residents self-reliant. Dayalbagh conducts production and marketing with a non-profit motive and thus sells quality products of daily use at reasonable prices. Dayalbagh products have intrinsic value and exude simple elegance and have minimal packing, rather than garnering undue attention and diverting the mind. In the present study, scales for conscious buying, social responsibility and progress in awakening spiritual consciousness are used to analyse the Dayalbagh production and consumption philosophy and its impact. It was found that the ones who use Dayalbagh products are more content, have greater motivation to practice and live a spiritually elevated life. It can be inferred from the study that personal economy brings out self control thus leading to higher levels of consciousness and spirituality. These individuals work for the welfare of fellow beings with a strong belief in fatherhood of God and brotherhood of man.

■ 380. PHYSICAL WORLD AS A MEANS FOR CONSCIOUSNESS EVOLUTION

CHHAYA SATSANGI, SOAMIPRASAD SATSANGI

Consciousness is awareness or knowing and is an integral part of human personality. It is beyond mind and matter, and our most prized possession. Its evolution enables us to distinguish between the temporal and the permanent. Like the sun gives life to this earth, similarly, consciousness give a direction and purpose to human life in accordance to ones level of consciousness evolution. For a small child, the school acts as a place for the evolution of his consciousness. The teacher makes use of the environment and the facilities provided in the school to develop the consciousness of the children, which gives direction to their future life and also gives purpose to their lives. Similarly this physical world is the school for the man and the Sant Satguru is his teacher. The Sant Satguru is an emanation of that Supreme Being- the creator of this universe. Though he looks like an ordinary human being but in reality he undifferentiated from the Supreme Being. His spirit is in direct communion with the Supreme Being. He uses the physical world as a means to teach the man and to remove his ignorance. The man learns through the daily experiences in his life here. These experiences finally add to his consciousness. Gradually the man realizes that his attachments to the things of the world are the cause of all the sorrows, while his attachment to Sant Satguru gives him peace. As the true importance of happiness can't be

realized in absence of sorrows, similar is the case with Supreme Being. We can't realize His importance in the absence of this physical world. Our interactions in the world help us to comprehend the worthlessness of this world and the temporal nature of the things here. The Sant Satguru thus helps us in realizing our true spiritual nature and our oneness with the Supreme Being. He guides us step by step using this world as the medium and helps us to evolve our consciousness. So this outer world which is also referred to as Maya is very much a part of that Supreme Being and is not an obstacle to realize our oneness with the Supreme Being but a means for that.

■ 393. A CONSCIOUSNESS BASED APPROACH FOR ENERGY SAVING CONSCIOUSNESS: A CASE STUDY

VIKAS PRATAP SINGH, RAVINDRA ARORA, KUMAR VAIBHAV AND D K CHATURVEDI

In the 21st century the most important issue is Energy sustainability and use of alternative energy for keeping the environment healthy. Self-Consciousness is the first step to think about Energy saving consciousness. In this case study we found that “self-consciousness for electric energy saving” is playing a key role in energy sustainability. Without energy saving consciousness, efforts in energy conservation can be difficult and lead to energy wastage. This case study depends on IIT Jodhpur's student consciousness for Energy saving. This paper intends to introduce the self-consciousness Model of Energy saving consciousness for Energy sustainability for keeping the environment healthy. The thought presented in the paper works around the opportunity to minimize the wastage of energy in our daily life, especially in residential consumption. A careful study of our daily routine is associated with energy consumption and our awareness for Energy saving. We have taken various questions on energy consciousness form for IIT Jodhpur's students. After the analysis of this case study we found that self-consciousness is a key part of energy sustainability.

■ 445. LAW OF DEPENDENT ORIGATION (PRATITYASAMUTPADA): TOWARD A SCIENCE OF CONSCIOUSNESS

PRABHA SHARMA

In the forest of Uruvela, immeresed in Vajrasamadhi ceasing ignorance and receiving the true knowledge, Tathagat proved that karmic consciousness, cultivation of emotions (Karuna) and to be happy in others happiness have been communicated in the scientific adherents. Individual Consciousness evolves into consciousness of actions or karma of the Sangh and further develops into Universal Consciousness. Buddhism investigates individual mind (Chitt) and forces of Consciousness on the touchstone of science. Pratityasamutpada conditioned genesis of mind Consciousness and have been explained by the theory of Dependence in Buddhism, and highlights the cause as a trial for mind Consciousness and internal Consciousness. According to Buddhism, cause is the essence of the existence of all objects.

SESSION C24 : SCIENCE OF SPIRITUALITY

■ 37. CRITICALITY OF SUBJECTIVE INFORMATION IN THE SCIENCE OF CONSCIOUSNESS.

GURSAROOP SOOD, PREM PRASHANT

Historically, religion and science have been at conflict with each other. Discoverers of the fundamental scientific truths were persecuted by the Church. During the renaissance, scientists mocked at the Church and even dismissed the idea of existence of God. The hangover of the conflict continues in a milder form even today. Culturally, western scientists find it difficult to accept metaphysical origin of consciousness as is experienced in the Eastern tradition. Scientists are not yet ready to accept the subjective experiential knowledge gained by the mystics in the laboratory of the Universe through well defined methodologies. There is, however, a hope in the new fields of Experimental Theology, Neuro-theology, Quantum mechanics, String theory, and emerging concepts of consciousness in the western thought, etc.

There is, however, yet a long way to bridge the gap between the reductive, empiricist, analytical, determinist or positivist approaches on one hand and the synthetic, integrative or holistic approaches on the other in the study of consciousness. The probable approach to study consciousness could be to try and analyse religious phenomenon by observation and experience. It also needs to be considered whether consciousness is a composite experience of a very large number of independent stimuli, and / or it also observes Planck's law of Discreteness i.e. consciousness like space, time and matter has a smallest size which is further indivisible. If so, is the evolved consciousness of humans a Composite consciousness?

■ 120. ENERGY CHANNELS OF SPIRIT AND MIND IN HUMAN BODY

SRIRAMAMURTI P, SANTOSH KUMAR KAKULAPATI

In the beginning of creation a great upheaval occurred in the Ocean of Spirituality as a result of which emanated from thence 'Soami' a sound current and the Prime Spirit Current 'Radha'. 'Radhasoami' created the five regions of Agam, Alakh, Anami, Satt and Bhanwargupha. From Satt Lok came out two Dhars of Kal and Adya, dark and yellow, which created along with Akshar Purush the regions of Universal Mind with its six subdivisions – becoming Purusha and Prakriti at Sunn, Brahm and Maya at Trikuti and Niranjan and Jyoti at Sahasdal Kamal. From there the three qualities of Sattva, Rajas and Tamas originated which became Vishnu, Brahma and Siva of 'Anda'. Brahma then created the material region with the ramifications of Prakritis, Tanmatras and five Gross elements and their combinations thousand fold.

■ 129. INTUITIVE CONSCIOUSNESS – IT'S EXISTENCE IN DIFFERENT LIFE FORMS AND ITS EXPLANATION

ASHA JUNEJA, SHIKHA VERMA

Can plants talk? The answer is yes. There are many examples to prove that plants communicate with each other and even with human beings. How were the animals and indigenous people warned of the impending danger of Tsunami much before the modern scientists? Everybody in some situation or the other especially a difficult one experiences that he/she knows exactly what to do. How does one explain all this? In the common parlance it may be called intuition and is a common feature of all life forms. This paper will illustrate various examples that corroborate the presence of intuition in various life forms.

In the popular conception, science is an entirely rational path in which discoveries are made by pure logic or mathematics. But deeper studies and research based on biographies of eminent scientist show that most of the great scientific discoveries (Kekule's structure of benzene; Mendeleev's periodic table; gravity etc) are the result of inspired intuitions and not merely logical conclusions. According to Einstein «The intellect has little to do on the road to discovery. There comes a leap in consciousness, call it Intuition or what you will, the solution comes to you and you don't know how or why». Science does not have a theory that explains or predicts the characteristics of intuition.

The Radhasoami Faith, a recent Religion of the Saints, has explained this phenomenon called Intuitive Consciousness and how it plays the integral role in the functioning of the Creation and its beings. How the common Supreme Creator of all communicates with each one of his beings and what is the reason behind the diversity in Creation? All these explanations and the questions raised before will be discussed in detail in light of the Radhasoami Faith in the paper.

■ 186. DAWN OF REALITY AS PER CONSCIOUSNESS LEVELS AND ROLE OF SCIENCE

GAURAV MATHUR

In our illusory, ever- changing world, one has to focus and redirect one's thought processes in a direction conducive to understanding the realms of reality and thus evolving one's own level of consciousness to perceive reality and the true desire of the Almighty. The perception of reality, as can be seen even in this physical world, is dependent upon the ability of the receiver to perceive it. I should aptly quote the old fable wherein some blind friends, are describing to each other what an elephant looks like by touching it. One touching its tail gives it semblance of a rope, the other near its legs declares it to be a tree and so on. In short the level of consciousness owned by them formulated the perception of reality for them. If this concept is true for physical world, with a gross reality of an elephant's existence itself being in question, just because of lack of consciousness (in this case being the power of vision), how can we plan to explore the ultimate reality by Physical scientists who have themselves changed or advanced their theories of sciences using instruments of this physical world, with 'approximations' and 'uncertainties' and 'fuzziness' inherently inbuilt in them. Still on the other hand as Man is called a Miniature of God himself and is considered a means of communion of soul with the supreme being, 'Aparavidya' i.e. knowledge derived from the

physical senses, can be used to form a communion with 'Paravidya' i.e. knowledge of the world beyond (or the ultimate truth) only if we realize its ('Aparavidya's) limitations and use its ('Aparavidya's) generalizations and applications to understand the linkages it holds with the Supreme Knowledge. Thus, to comprehend the Ultimate reality, we have to enhance our consciousness levels either through Aparavidya's linkages to 'Paravidya' or through spiritual means of 'Surat Shabda Yog' for accessing 'Paravidya' directly. Until and unless we enhance it or at least try for it, we will not be able to understand the purpose of this creation. Acceptance of theory of 'Unification of Forces' shows a path which leads to the concept of One Supreme power with different manifestations according to perceptions.

Hence today it is our duty to use Scientific temper, and also its limitations, to develop an inherent desire to augment our consciousness level to understand the true reality as against the perceived one, because the reality which dawns on oneself is according to the consciousness of the mind searching for it.

■ 232. SCIENTIFIC BASIS OF EMOTIONAL CONSCIOUSNESS SWAMIPYARI, MAANVI MATHUR, UMANG VERMA

Emotion appears to be a key component in the behavior of conscious beings. William James conceived mental life as a «stream of consciousness». Each state of consciousness possesses both a 'cognitive aspect' and a 'feeling aspect'. The emotional brain is centered in the limbic system. It connects the higher and lower functions of our brain. It is called the «emotional center» and the «conscious system» of the brain. This paper deals with the Limbic System's role in emotional consciousness. Far from being a state of consciousness divorced from the physical brain, a person's emotions are produced by chemicals intertwined with physical processes of the body. In the truest sense, what affects the body affects the mind and emotions, and vice versa.



Poster Abstracts

POSTER SESSION I

■ 39. ART AND HUMAN CONSCIOUSNESS: A STUDY IN COGNITIVE NEUROPSYCHOLOGY BASED ON THE IMPACT OF ART ON COGNITIVE SKILLS IN PRE-SCHOOL CHILDREN

SANT PYARI KUMAR

Paintings make use of a universal method of expression which is not connected with any of the usual human limitations (language, traditions, religion). As such, they connect us with eternal values, common for all. A painting is a bridge which unites different levels of understanding and consciousness. Art is an activity that arises in the context of human cultural and cognitive evolution. Its sources include not only the most abstract integrative regions of the brain but also the communities of mind within which artists and audiences live. The interaction of these sources creates complex cultural-cognitive domains which are reflected in art. Art and artists are active players in the co-evolution of culture and cognition. Art is also an activity intended to influence the minds of an audience. Just as parents or teachers guide their children's attention to certain aspects of the world, most artists attempt to control their audience's attention, leading it by the hand into a carefully engineered experience.

■ 42. FRIENDLINESS OF NEGATIVE ATMOSPHERIC IONS TOWARDS CONSCIOUSNESS

MM SRIVASTAVA AND SHALINI SRIVASTAVA

Consciousness relates with a field of force centred in a brain, operating throughout the body, simultaneously into all levels and impacts our sensory and perceptual system. Transmission, storage and processing of information regarding consciousness are performed by neurons involving several effects and mechanisms which are yet not fully understood. Philosophical reflection of the terms awakening, awareness and attention collectively constitute the substrate of biological consciousness. Atmospheric ionization leads to the formation of charged particles in the form of negative and positive ions. The normal ratio of positive to negative ions is 12/10. Changes in ratio of positive to negative charged ions have been found to exhibit remarkable effects on the behaviour of plants, animals and human beings.

■ 59. DOES CONSCIOUSNESS AND ELECTRONS EXIST IN WATER - A NECESSITY FOR ALL FORMS OF LIFE?

INGRID FREDRIKSSON

Does consciousness and electrons exist in water? In every living being and organism there is an entire world as amazing as the one we see around us. In our body there are 10,000 billion cells, and DNA that extends 10,000 kilometres. The base pairs in our DNA are held together by hydrogen. Perhaps it is the hydrogen bonds in DNA's base pairs that constitute our immune system and our consciousness! There is water in the cells, and between them, and while large molecules have to go through membrane proteins to enter the cells, small molecules like H_2O and O_2 can pass through the cell membrane without difficulty. In the spaces between the brain cells, at the end of every neuron, the basic unit of a brain cell, are synapses, where chemical charges build up. In the same space dendrites, tiny filaments of nerve endings, communicate with other neurons, sending out and receiving their

own electrical wave impulses. This, together with the quantum hologram and non-local consciousness, provides an explanation and an exciting developmental phase in the illusion in which we live. Consciousness appears to exist in everything that has DNA.

■ 86. CONSCIOUSNESS AND IMMUNE-STRENGTH PROFILE: A CORRELATION

AMLA CHOPRA, VINEETA MATHUR, NEHA SHARMA, SANDEEP PAUL, P. SRIRAMAMURTI

A non-invasive method is developed to determine the effect of consciousness rather than the cause of consciousness which is not pragmatic to measure. The consequence of meditation on Immune system is apparent and is a measure of one of the effects of consciousness. This study investigates whether the subjects of the study who are engaged in meditational practices obtain an activated immune system or not. The experiment is also designed to study the effect of meditation in elevating the spiritual well-being of subjects.

■ 90. THE IMPACT OF MEDITATION ON VOCAL SOUND QUALITY

RADHA PYARI SANDHIR, SUMATI VUPPULURI

Creation commenced with a sound, according to many religions; a sound inherent in humans. The practice of meditation and external recitation of sound can help one hear internal sound. External sound comes in the form of music. The link between meditation and music has been prevalent throughout history. The singing of certain raagas by sages and musicians in ancient times resulted in the concentration of energy which influenced the elements of nature, and triggered emotional changes. Certain musical pieces are capable of influencing moods, and modifying concentration level. In this paper it is proposed that the reverse is also true, that is, a certain amount of concentration can influence the quality of music. We take the example of inward concentration and contemplation: meditation, and study the influence it has on vocal sound quality. The authors here focus on the Radhasoami Mat philosophy in particular. Using notes from the harmonium, an Indian musical instrument, as a reference, comparisons were done on the frequencies of notes sung before and after meditative sessions. The experiments were performed on a set of people with varying musical background and experience in meditation. The effect of varied time lengths of the meditative sessions were also taken into consideration. The results confirm the hypothesis that the deep self-contemplation can enhance the quality of music notes.

■ 91. APPROPRIATE AND POTENTIALLY FRUITFUL METHODS FOR STUDYING CONSCIOUSNESS

ASHA SATYAVOLU, GAGANDEEP NIGAM

Consciousness is the inner self which comes from the soul of an individual. It relates the mind, heart and soul to give rise to thoughts at different levels. Spiritual consciousness is the awakening of the soul at higher levels. This is observed at a place called DAYALBAGH where people at all level having spiritual atmosphere around them. The idea is about becoming consciously aware that our identity extends far beyond the realms of our current state of awareness at different levels of alternate states of consciousness. It is an awareness of being that is both infinite and eternal. Having this understanding and perspective, we can then ask our inner self to tap into these different levels of consciousness and implement a power of suggestion beyond, anything we have ever known. This will be flashing on How and What

factors bring consciousness (such as Abhyaas (Meditation), Adhyayan, Seva, Vyayaam).

■ 96. ENVIRONMENTAL CONSCIOUSNESS AMONG PEOPLE TO SAVE OUR PLANET EARTH

GAGAN DEEP, SEEMA GUPTA

The earth is our home. This beautiful planet provides us with beautiful gifts and an environment that creates and sustains life on the earth. No other planet in the universe has been so generously endowed. Since the birth of human civilization, people recognized, appreciated and respected the beneficial effects of the sun, water, air and soil. Environmental degradation will spell doom for human life. The world constitutes five elements, earth, water, air, fire and sky. Of these, the three elements, earth, water, air are prone to pollution, while the rest remain unaffected. The pollution which disturbs ecological balance is called environmental pollution.

■ 99. ARTIFICIAL INTELLIGENCE: THE NEW FRONTIER IN CONSCIOUSNESS STUDIES (TWO CASE STUDIES)

AKSHAR SRIVASTAVA, PREM PRAKASH SRIVASTAVA

This paper carries forward a rising trend of the last three decades when advances in sciences led to the study of consciousness on scientific and empirical lines. The reference is to the concept of Artificial Intelligence (AI) and the conundrums around it such as: the linkages or the lack of it, between Artificial Intelligence (AI), machines and consciousness. Argued as the next stage in evolution (Edward Fredkin), many futurists believe that Artificial Intelligence (AI) will ultimately transcend the limits of progress. It is true that Artificial Intelligence (AI) is by far the most exciting and the most controversial field in robotics (Tom Harris). Everybody agrees that a robot can work in an assembly line, but there's no consensus on whether a robot can ever be intelligent.

■ 130. A STUDY OF CONSCIOUSNESS OF UNIVERSITY STUDENTS IN RELATION TO THEIR ACADEMIC ACHIEVEMENT AND LEVEL OF EDUCATION

SADHNA SHARMA, SONA AHUJA AND DEEPIKA SATSANGI

The present empirical study was designed to study the Correlation between the Academic achievement and consciousness at the two different educational levels of the University. The Study was a non-experimental Correlation study which was conducted on 150 students (75 graduates, 75 post graduates) of Faculty of Education, Dayalbagh Educational Institute, Agra, Uttar Pradesh, India. The number of male and female students was in the ratio of 65:35. A willing participation of the students in the study was sought. Consciousness Quotient Inventory by Brazdau was used to assess consciousness quotient of the university students at the two different educational levels that is at the graduation and post-graduation levels. To measure the academic achievement of the students, students' scores from Internal and external assessment at the university were considered. Pearson's' Product moment Correlation was used to find out correlation between the scores of Academic achievement and consciousness quotient. Results indicated a significant positive correlation between academic achievement and Consciousness of the students at the two educational levels at the university. Moreover results indicate a rise in consciousness level with the rise in the educational level.. At the end, educational implications of the study are provided for the

teachers, educators, administrators and other people associated with the field of education regarding a new approach based on consciousness towards teaching, development of technologies for consciousness based education.

■ 143. SPIRITUAL INTELLIGENCE AND SUBJECTIVE WELL-BEING OF ELDERLY LIVING AT HOME AND IN OLD-AGE SHELTER HOMES

KAVITA KUMAR, SWATI TRIPATHI

Human aging, the very process of living into old age, includes a potential to mature into something called gerotranscendence (Tornstam, 1994). During this stage of life, there is often a feeling of cosmic communion with the spirit of the universe, and an understanding of time, space, life and death. Hence, in old age, spirituality and subjective well-being are two important concepts which need attention from a psychological perspective. Spirituality plays a central role in self-help, individual well-being and physical fitness. Spiritual intelligence (SI) is the adaptive use of spiritual information to facilitate everyday problem solving and goal attainment, or it is the relationship of mind and spirit. Subjective Well-Being (SWB) refers to how people experience the quality of life, including both emotional reactions and cognitive judgments. With this backdrop, the investigators have attempted to understand the difference between the Spiritual Intelligence and Subjective Well-Being (SWB) of 60 elderly people (60 years and above) staying with their families or staying in old-age shelter homes in Agra, India (30 elderly people in each group). Self constructed 'Spiritual Intelligence Test' (SIT) was administered to measure the Spiritual Intelligence, while 'Subjective Well-Being Inventory' developed by Nagpal & Sell (1985) was used to measure SWB of both groups of elderly people. Results were analyzed on the basis of Mann-Whitney U test. Statistical analysis showed that the two groups did not differ significantly on spiritual intelligence but there was significant difference between the SWB of the two groups. The results will be discussed in the light of Spiritual Intelligence and the different parameters of Subjective Well-Being of elderly people on the overall consciousness level.

■ 144. NEEDS AND CONSCIOUSNESS

SUNITA SATSANGI, GAGANDEEP NIGAM, PARUL VERMA

Consciousness is the very window through which we perceive reality and reflect upon the emotions and feelings that color our lives in order to have any good theory about ourself. We must know what kind of self we are looking for. This sense of self can be phenomenological or autobiographical or transcendental self. There are different levels of consciousness in which we, as individuals, function. Every individual grows in consciousness in different stages from the lower level to higher level of consciousness which A. Maslow referred as 'deficiency needs' to 'growth needs'. These needs work as a motivational force to step forward for next consciousness level. Growth needs such as self actualization are important even when many of the basic needs are unfulfilled.

■ 150. A NOVEL ENERGY SYSTEMS APPROACH TO COMBAT THE CLIMATE CHANGE: ENVIRONMENTAL CONSCIOUSNESS

RANJIT KUMAR, PONNALA VIMAL MOSAHARI, RAJEEV SATSANGI, GURDEEP SINGH

Climate change is unpredictable change in the weather/climate which persists for longer period of time, regardless of cause. Scientists have made enormous inroads in understanding climate change, causes, impact and solutions. But not significant contributions have been made to combat these vulnerable potential impacts that will affect people today and in coming decades. It is the need of time to chart out a roadmap for itself in the light of

the report on climate change. Climate change can be mitigated in many ways. A system approach based on sustainable development can be a solution to mitigate the impacts of climate change by environmental consciousness. It involves improvement of efficiency of energy intensive devices, vehicles and buildings, all of which involve direct and indirect gas emissions, and adopting new energy - efficient technologies. In this system, development can be based on fuel - efficient vehicles, hybrid vehicles, and affordable and safe public transport systems and promotion of usage; energy usage based billing system; buildings integrate green technologies such as solar photovoltaic systems, which are particularly relevant in a country like India where plentiful sunlight is available and the improved cooking stoves and adopting high efficiency lighting, heating and cooling devices which could be made available for the public. This system approach may evolve as an environment friendly economic tool by raising environmental consciousness which can be easily adopted without tampering living standards, style and tradition. Conserve, reuse and recycle are the cardinal rules of green living. If we remember them at all times, we can be environmentally conscious in everything we use or do and this will help to mitigate the climate change.

■ 152. NATURE : A GATEWAY TO CONSCIOUSNESS

POOJA SAHNI, PRAKASH SAHNI

Interaction with the natural environment has been shaping the brain of our genus for over 2 million years. It stimulates the desire to understand our world with the confidence to challenge the mysterious unknown. Through study and exploration of the natural world, we nurture and hone our capacities for critical thinking, problem solving, intellectual analysis and competence. In the process, we discover the remarkable ingenuity of life, and the possibility of its purposeful engagement, a kind of teleology that suggests the sole objective of individual forms is to pursue higher levels of consciousness while making their way through the world. While 'consciousness' is used in many different ways, it includes states of perceptual experience, bodily sensation, mental imagery, conscious experience or 'Qualia', emotional experience, thought, and more. It is being proven that, with the right physical properties, in our case nature or the phenomena of the physical world, mind inevitably yield corresponding states of conscious experiences. But how and why does natural phenomena produce experiences that make a person conscious (of the inner spirit) and how these conscious experiences or consciousness act as stimuli for further pursuit of higher levels of consciousness, Ultimate Truth and Reality? This central mystery of nature-mind (cognition)-consciousness has been studied through a two-step approach : firstly by study of the Nature and Body-Mind-Intellect interaction, how nature impacts cognition-the specific elements of nature that influence the brain and overall well-being, and secondly, by establishing an immanent correlation of Body-Mind-Intellect and levels of Consciousness.

■ 165. PERSONAL CONSCIOUSNESS OF TEACHERS AND ORGANISATIONAL CLIMATE: A PILOT STUDY WITH REFERENCE TO EDUCATIONAL INSTITUTES

SHALINI NIGAM, SANJAY JAIN, PURNIMA BHATNAGAR

This research aims to understand the levels of personal and organizational consciousness in specific reference of the education sector, and understand linkages with teaching and learning methodologies, and motivations. It will additionally try to derive the organizational climate in various institutions as either deterrents or enablers of consciousness. It is suggested that an effective organizational climate would be determined by the awakened personal consciousness of the individuals within the organization. An organizational climate should be such that it evokes and connects with the personal consciousness of every individual in order to have a good organization. Being an exploratory research, the

results would be reported based on a questionnaire administered on a focus group of experts in educational institutions across the world. We would examine the teaching philosophy of educators that is focused on an overall development of students rather than purely an academic pedagogy.

■ 182. CONSCIOUSNESS MEASUREMENT PROBLEM IN MAN, MOSQUITOES AND MICROBES: A REVIEW

RICHA KUMARI, SOAM PRAKASH

At the heart, the very nature of the consciousness science is judicious, warrants observations and measurements. This perception invokes that it can be measured but the mystery remains alive. Numerous researchers have provided theoretical, experimental and empirical methods to measure consciousness. However, the mystery of measurement is still alive and theologians, neurologists, cognitive scientists and psychologists have represented human consciousness measurement with a different set of hypothesis and experiments. However, how the collapse of wave function happens still requires an integrated approach as we consider man to be intelligent equipment leading to scalability of consciousness and its growth to super consciousness level from unconsciousness. In case of invertebrates, the consciousness in groups of bees, ants and scaphopodes have been discussed by many researchers. The neuronal intelligence of insects has not been investigated in detail as humans. Many single celled organisms/microbes are sensitive or are conscious to physical vibrations, heat, pH, electrical and magnetic field, light, particular chemicals and even to the presence of other living organisms in its surroundings.

■ 183. HIGHER CONSCIOUSNESS : AN EXPERIENTIAL JOURNEY

VINIT KUMAR

Acquiring Higher Consciousness is not easy. It is generally acquired in a state of deep meditation. All human beings are enveloped in some sort of desire, anger, attraction, attachment (to other beings) and ego. It is in being able to transcend these that one begins on the path of acquiring higher consciousnesses. The only method to do that is by meditating. All human beings have within them sounds of higher regions reverberating, so by resonating with that sound one moves on the path of higher consciousness. A slightest ascension immediately helps the hapless human being to control the above mentioned five feelings. The earliest indication of higher consciousness shows up by one experiencing very strong intuitions. It is ironical that higher consciousnesses can not be passed-on or tested per se, only experienced.

■ 189. LET US TAKE A LEAP INTO THE FUTURE, BY KNOWING THE INNER ORBIT OF CONSCIOUSNESS THROUGH MEDITATION

MANI SHARMA, BHARTI, BINATHI BINGI

Man is a progressive being and being the only self conscious species, humanity shall have justified its existence through its constant search for self-fulfillment through the progressive manifestation of the Soul's light in and through its manifold body. Our mental and physical well being, and the moral and ethical outlook of mankind, may depend more than is realized upon what Scientists and Philosophers understand to be the nature of Space. Quite possibly the larger significance of modern adventures into space may lie in the fact that they will

result in further exploration of man's inner orbits of Consciousness. For they have to open their immortal eyes to get higher Consciousness, through which one can visualize inner appearance and experience of an invisible inner space. For this interior Plenum, there radiates in every person the Reality of that which is ultimately Universal Consciousness. To get all this experience meditation is the only process through which one can get opportunity to use self-knowledge, and through intuitive glimpses successfully transform animal man into a truly human being sparking fully with Divine Spark of God like characteristics.

■ 199. MAN, KNOW THYSELF

KANTA ARORA

Upanishads identified Self as consciousness and assert that consciousness is the true reality of the whole world which illuminates each experience. It is evident that consciousness which is Self, and Reality are always present together throughout experience. Since both are always present, no person can experience one without the other. The true nature of the self is Prajanam i.e. unoccupied awareness (awareness in pure consciousness). "I" or Atma is the eternal consciousness transcending the three conscious states waking, dream, and deep sleep- and observes all the mental activities or cessation of such activities taking place in these three mental phases. "I" is also present during these phases as continuous consciousness / aware of happenings within and without of the body.

■ 210. THE SCIENCE OF HIGHER CONSCIOUSNESS, MEDITATION AND ATTENTION: TRANSFORMATIONS IN BRAIN STRUCTURE – FUNCTION AND ROLE OF MICROTUBULES

SAATVIKI GUPTA, NANDITA GUPTA, ARUN KUMAR GUPTA

Several theories of consciousness postulate the existence of different 'levels' of consciousness based on the difference between focusing attention outwards towards the environment, termed 'consciousness' as distinct from a more advanced level of focusing attention inwards toward the self or 'self-awareness'. The highest level of consciousness is 'meta-self-awareness'— being aware that one is self-aware, developed only through meditation based intuition. Meditation is a practice that involves a voluntary alteration in the state of consciousness by directed, increased, internalized attention/consciousness unaccompanied by any associated external task.

■ 219. DRIVER'S CONSCIOUSNESS AND TIRE INFLATION IN CONTEXT TO CAR SAFETY

MAJER SINGH, DEVENDER KUMAR CHATURVEDI

Consciousness plays an important role in performing day to day activities. Driver's awareness in the field of automobile driving along with complete attention, while driving a car is the prior requirement not only for the car safety but also for the clean and green environment. In the last few years traffic density and the complexity of the automobiles have grown so fast that requirements for apt consciousness has become very necessary. The driver has to focus on a number of factors like his mental health, his concentration power, his food habits, health issues etc. in this regard. But contrary to this, the majority of drivers do not consistently monitor the tire pressures in their vehicles which are harmful for the good condition of the car and healthy environment. This paper focuses on the relationship of driver's consciousness with tire inflation in context with car safety, tire wear, fuel consumption and greenhouse gas emissions. To study the driver's consciousness in varying tire pressure the objectives formulated for the study were- to derive the relationship

between tire pressure and driver's consciousness, to study the driver's consciousness in regarding various input parameters that will be constant for a particular driver but will vary from driver to driver and to study the concept of a particular driver about the tire inflation pressure, as the only parameter. Case study was done to analyze the objectives. Self-constructed tool (opinionnaire) was used to measure the driver's consciousness in relation to tire inflation. As per the responses received from the driver on the opinionnaire, he was found more conscious towards car safety with proper tire inflation, which will help in fuel economy, increasing vehicle efficiencies and decreasing greenhouse gas emission. Indirectly, it will decrease all crashes and save several human lives per year and will enhance national income and security.

■ 225. HOLISTIC HEALING AND CONSCIOUSNESS

SIDDHARTH AGARWAL, SAPNA AGARWAL, VIJAI KUMAR

Holistic healing is a natural way of treatment of various human diseases that works to clear the root cause of disease, not just the symptoms and at the same time utilises the opportunity to increase the consciousness of the individual. It encompasses integrative therapies which act by stimulating and correcting vital force of the body. Any disease whether physical, mental or spiritual is a wonderful opportunity for self enlightenment. Holistic healing is in fact conscious healing of body, mind and soul.

■ 238. MATHEMATICAL FORMULA FOR SPIRITUAL QUOTIENT AND EMOTIONAL QUOTIENT AS INDICATOR OF LEVEL OF CONSCIOUSNESS

ANIRUDH KUMAR SATSANGI, ANKITA SATSANGI

Danah Zohar had evolved a model of spiritual quotient (SQ) based on the six petals of a lotus and its centre, corresponding to the seven chakras described by the Hinduism's Kundalini Yoga, as an aid to the process of individuation in the mid-1990s. Contribution of Danah Zohar for coining the term spiritual quotient for the first time is immense. But she had not established any mathematical relationship, which is very much required, for this quotient. Mathematical relationship of spiritual quotient and of emotional quotient will certainly facilitate further research in the area of spiritual science.

■ 259. QUANTUM BRAIN BIOLOGY AND CONSCIOUSNESS

PREETHAM PULAVARTHI, RAMANI PULAVARTI

The human brain, and that of other mammals and other types of animals, is a Quantum Brain. Several decades ago, David Bohm pointed out many striking similarities between our thought processes and quantum processes. We now realize that our brain is not just a classical biochemical system. It is also a "macroscopic quantum system" and such a system can "resonate" with the world. On the quantum level it can capture and process signals that far exceed the range of the signals available to the bodily senses. The quantum perception of the world is just as real as its sensory perception. Our quantum -resonance decoding brain could in principle capture information on anything and everything that creates quantum interference waves in the universe. The brain being the instrument of consciousness and cognition, consciousness can also be explained in "quantum" terms. Quantum physicist Danah Zohar analyzed the quantum like behaviour and concludes that consciousness functions according to the laws of quantum mechanics. The quantum like qualities of the brain can be realized only when one looks at the sub-atomic scale of consciousness where all regular solid structures dissolve into waves of probabilities. Scientific discovery of non-locality i.e. the wave /particle duality, suggests that everything including space and time are

composed of the same essence. Consciousness is thus a quantum mechanical entity that can have an independent existence.

■ 276. CONTROLLING ATTENTIONAL SWITCHING IN NEUROMORPHIC BINOCULAR RIVALRY MODEL OF MACHINE CONSCIOUSNESS

GARIMA KAPUR, HANS MOHAN, VIPUL SAXSENA, CM MARKAN, VP PYARA

We would like to realize all features of Binocular Rivalry using Adaptive Winner Takes All (AWTA) CMOS circuit (Kruger et al, 1997) showing adaption using floating-gate transistor synapse (Rahimi et al 2005). Synapse transistors allow us to build silicon chips that learn and adapt locally and autonomously in a fashion similar to that used by biology to tune its circuits (Diorio et al 2002). The circuit is devised in such a way that there is a negative feedback mechanism, consequently the output voltage will always return to the steady state voltage determined by its bias current regardless of the DC input level. The possibility of first case is 'Dominance vs. Suppression' where unequal strength stimulus is presented, then the one with higher strength dominates (win) and other is suppressed (lose). Second feature speaks of 'neural adaptation', i.e., with dissimilar input stimulus the steady state output is greater for the cell with the lesser input, however with input current input voltage decreases which leads to amplified ($-C1/C2$) increase in other voltage (lose cell) and hence this voltage with losing dynamics crosses the winning cell voltage and win. To realize the feature of 'focused attention', the circuit is modified in such a way that it could control adaption of charge at the respective floating gates, i.e., the winning/losing cell voltage is controlled by a potential characterizing as "meditation state", irrespective of input stimuli. The circuit is simulated using BSIM3 level 49 MOSFET models using T-Spice 0.35 μ m CMOS process. The circuit consumes 0.4mW total power, shows thermal stability of about 1.23 μ A/ $^{\circ}$ C and occupies 25 μ m $\times$ 20 μ m chip area. The application of our work lies in the fact that CMOS circuit can be implanted in the robot brain and hence opens a window in the area of machine consciousness. The visual brain of robot, if embedded with our proposed chip, could incorporate all the features of BR including effect of meditation on BR. Such Si realization of BR can also help people with bipolar disorder.

■ 277. PERSONALITY CORRELATES OF INTUITION

KUMAR RATNAKAR, SURILA AGARWALA

An exploratory study was designed to analyze the personality characteristics of intuitive persons. It was assumed that intuitive ability is a unique and rare ability and hence intuitives have some peculiar personality characteristics which need to be explored. This knowledge may help in the development of children's personality in such a way that intuitive ability may be inculcated in them in a spontaneous manner. A sample of 20 intuitive subjects (13 females and 7 males) was selected. A self-developed screening questionnaire on intuition was administered on a large number of people from various parts of the country irrespective of age, gender, educational qualification, religion, and socio-economic conditions, because intuition is irrational, beyond intellect, sudden, and a subjective experience, the source of which is unknown. Finally 20 subjects found to be intuitive, were included in the sample. For exhaustive personality analysis, Thematic Apperception Test and Case study were used. Qualitative analysis of data gathered by TAT and case study revealed some common personality characteristics among all intuitive subjects. Many of these personality characteristics are similar to the personality characteristics of intuitives described by Jung, who proposed eight personality types based on the interactions of two attitudes (extraversion and introversion) and four mental functions (sensing, intuiting, thinking and feeling). However, the present research has dealt with exhaustive personality

analysis and hence reveals many more personality characteristics of intuitives not included in the description of intuitives given by Jung.

■ 281. A COMPARATIVE STUDY OF CONSCIOUSNESS AND METACOGNITION OF EXTROVERT AND INTROVERT STUDENTS

PREET KUMARI, PRIYANKA KHANDELWAL

The objective of present research was to compare the metacognition and consciousness of extrovert and introvert students. It was hypothesized in the research that there is no significant difference between the metacognition of extrovert and introvert students and there is no significant difference between the consciousness of extrovert and introvert students. The sample consisted of 100 under graduate college students (50 Extrovert and 50 Introvert students). The tools used in the research were Introversion-Extroversion Inventory (Aziz & Agnihotry, 1923), Metacognitive Thinking Scale (Sandu & Goel, 2010) and Self Consciousness Scale (Fenigstein, Scheier & Buss, 1975) to measure the personality type (extrovert, introvert), metacognitive thinking and self consciousness respectively. t was computed for data analysis in the research. $t(98) = 1.177$ $p > .05$ indicated that there is no significant difference between the metacognition of extrovert and introvert students. It was found in the study that there is significant difference in few abilities, as self evaluation, self awareness, self monitoring and self motivation, among introverts and extroverts.

■ 296. CONSCIOUSNESS AND MEDICAL THERAPIES (CONSCIOUSNESS THE WAY OF LIFE AND TREATMENT – RAJABORARI)

VIJAY SHANKER LAL SRIVASTAVA, KUNDAN SRIVASTAVA

Our paper would study the method we can employ to educate Rajaborari residents about the consciousness, and help them achieve and build up a good life for healthy and happy living with some basic help on necessities like medicine and education. Biomedicine perceives diseases as mechanical errors at the micro level, while consciousness-based medicine perceives diseases as disturbances in attitudes, perceptions, and experiences at the macro level — in the organism as a whole. Thus, consciousness-based medicine is based on the whole individual, while biomedicine is based on its smallest parts, the molecules. These two completely different points of departure make the two forms of medicine very different; they represent two different mind sets and two different frames of reference or medical paradigms. Consciousness would not only lead them to live a healthy life, but would also lead them to understand themselves from a system point of view. Holistic Medical therapies also help greatly one to achieve the best in terms of consciousness by leading them towards almighty.

■ 300. A SYSTEMIC MODEL OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FOR ENHANCING LEARNING AND EVOLVING CONSCIOUSNESS

PRAVEEN SHIVHARE, CHHAVI SHIVHARE, NEHA SHIVHARE

ICT, learning and consciousness are among the hottest buzzwords in education field all over the world today. Related to these, this paper is an attempt to look into questions such as: What is the broad concept of ICT, why and how is it related to Learning and Consciousness, and the research possibilities in this field. The paper proposes a systemic model for understanding ICT as having four major dimensions viz. physical, mental, emotional and spiritual which

is the highest dimension. This model indicates the faculties involved, acquisition level, processing and its results related to each dimension of ICT. Physical dimension of ICT is supposed to be related to information and knowledge perceived through sense organs; Mental includes intelligence and wisdom as a result of thinking, reflection, etc.; the Emotional dimension is related to feelings; and the Spiritual dimension is related to cosmic information and consciousness, leading to the development of intuition and insight of an individual. Thus, the model elaborates that ICT based on Unified Communication and technologies is much more than the simple use of hardware and software for fulfilling our purposes.

■ 305. AN ANALYTICAL STUDY OF CONSCIOUSNESS AMONG THE STUDENT'S OF RURAL AREA REGARDING THE EDUCATIONAL POLICIES IMPLEMENTED BY U.P. GOVERNMENT –A CASE STUDY OF AGRA REGION.

ANISHA SATSANGI

Education in India is provided by the public sector as well as the private sector, with control and funding coming from three levels: central, state, and local. The Nalanda University was the oldest university-system of education in the World; Western education became ingrained into Indian society with the establishment of the British Raj. India has made progress in terms of increasing Primary education attendance rate and expanding literacy to approximately two thirds of the population. India's improved education system is often cited as one of the main contributors to the economic rise of India. Much of the progress, especially in higher education, and scientific research, has been credited to various public institutions. The private education market in India is merely 5% although in terms of value is estimated to be worth \$40 billion in 2008 and will increase to \$68–70 billion by 2012. However, India continues to face stern challenges. Despite growing investment in education, 25% of its population is still illiterate; only 15% of Indian students reach high school, and just 7% of the 15% who make it to high school, graduate. The quality of education whether at primary or higher education is significantly poor as compared to major developing nations. As of 2008, India's post-secondary institutions offer only enough seats for 7% of India's college-age population, 25% of teaching positions nationwide are vacant, and 57% of college professors lack either a master's or PhD degree. The ministry of education is responsible for the affairs related to education in the state. The state minister of education in UP takes a keen interest not only in the following up of the state policies of education but also in the quality of education. The education board in Uttar Pradesh provides all the statistics, as well as administers the education policies, grants recognition to schools etc. The education department in UP monitors the schools in each district as well as the open schools set up by the government. In keeping with the directives of the Board of Education, the education departments implement the directives mentioned in the Children's Right to Education Act. An effort towards the universalization of education especially at the school level is soon being achieved by the UP Education system offering education for all.

■ 318. THE EFFECTIVENESS OF BODY MIND MEDITATION IN COPING WITH STRESS

P.K. MONA, PRACHI SHARMA

The study aims to determine the effect of body mind meditation in coping with stress. It also attempts to study the differences in the degree of stress among males and females. A sample of 160 meditators and non-meditators with equal number of males and females from age – group of 30 to 60 years was randomly selected from Yogi Shivirs and Meditation Camps, Agra. Only those meditators who were doing meditation for the past two years,

and belong to nuclear families were included in the sample. ICMR Psychosocial stress questionnaire was used for measuring the stress level of meditators and non-meditators. Results indicated that meditators show comparatively lesser degree of stress symptoms than non-meditators. Similarly females showed more stress symptoms than male respondents.

■ 324. LACUNAE IN CURRENT MEDICAL UNDERSTANDING OF DEATH

SANDEEP SALUJA, RAAG SALUJA

Over the past few years, medical science has made many attempts to define death. Extensive criteria have been laid down which are extremely useful from a legal and possibly ethical perspective. While, these may be attempts to describe a state of irreversibility, the answer to the question 'what is death' still eludes medical science, and many doctors will give up and say that this is a question for philosophers to decide or say that we do not know what death is as much as we do not know what life is. Studies involving electrical recordings of the brain using EEG and bispectral index at the time of death have come up with new information which challenges existing medical notions. These studies give evidence of activation of consciousness after what is medically defined as time of death. Descriptions of near death phenomena abound in the lay literature and many descriptions need not be correct but they do deserve a scientific analysis and scrutiny. Interestingly, a common pattern seems to emerge in many descriptions. The much awaited results of Sam Parnia's AWARE study may also provide evidence of existence of consciousness beyond what is currently medically defined as life. A proper understanding of the process of death is of utmost importance to medical science since it is ultimately the physician on whom the entire onus lies and the medical community needs to urgently address these lacunae.

■ 331. AWARENESS OF CONSCIOUSNESS LEVELS TO TRANSCEND THE PATH LEADING TO ULTIMATE CONSCIOUSNESS

CHARANDASI DANTU

Consciousness, a noun, is defined by the Oxford Dictionary as the state of being aware of and responsive to one's surroundings; a person's awareness or perception of something; the fact of awareness by the mind of itself and the world. The objective is to understand consciousness and how its levels change in a human being. A spiritual traveler is a seeker of the ultimate truth that is there in this universe, nay the entire creation. His journey during this search is through a long and meandering arduous path. If consciousness pertains to only sensing or be cognizant of the physical or material things around a being through the five senses, then even an animal qualifies to have consciousness. In animals the physical senses, viz. hearing, vision or scent smell are developed to a much higher degree of sensitivity than that of human body. Then, why and how is human considered to have the highest consciousness.

■ 332. FOOD AND HIGHER CONSCIOUSNESS

B. SARAVANAN, LOKESH ARORA, DIVYA ARORA

A survey by the authors revealed that discerning people are aware and have felt the subtle effects of foods they take, which may make them warmer at heart or cold, alert or sleepy, drawn to higher consciousness or lower – some have even felt that the consciousness of persons preparing and serving food flows into the recipients which may lead to the postulate

that levels of consciousness may be passed on through food. We have heard of chefs putting love into a dish - leading to the postulate that the degree of attention current devoted by a person on his creation makes it appealing / lovable to that extent, which is however, beyond the parameters of known measurements. In other words, the chef can induce the food he prepares with his emotions, his consciousness. The same postulate could be extended to the practice of taking sanctified or spiritually charged eatables called "Prashad" in Sant Mat in India, which could contain the loving consciousness of a super conscious Adept. Thus a pill to heighten our cognitive powers may not just remain a scientific fiction, after all!

■ 333. EFFECT OF AMBIENCE AND DESIGN ON CONSCIOUSNESS

BULBUL SHRIVASTAVA, BINTI SHRIVASTAVA, TUHINA SINGH

Since childhood, man is bound with the precepts in some or the other way depending on his cultural and traditional environment. Few dare enough to refuse the precepts and venture to know about the instrumental force and energy which is unseen and veiled. The simplicity and complexity of universe drive them out from the set beliefs of their societies and akin. Hubbub of daily life has forced such seekers of truth to take refuge either in the lap of Himalayas or in the realm of sea vistas. Why? Certainly for peace of mind to think, analyze, rethink and so on to reach somewhere near to their aim. Emphatically the inspiration comes through the Grand Design of Universe. Taking this inspiration the interior designers may provide some solution regarding the place and peace. Interior design can help to create right atmosphere and ambience to induce the level of consciousness in a person who is in search of higher consciousness.

■ 337. TRUE HAPPINESS THROUGH CONSCIOUSNESS

BHAWNA JOHRI, SHYAM SUNDER ANEJA

Most persons on this earth are busy and involved in achieving high positions and facilities for happiness through other objects, such as machinery, house, electronic, vehicles, communication gadgets etc. which are made by man. Though artificial pleasures are availed, they do not remain forever. On the contrary it creates different types of liabilities and problems regarding repair and maintenance etc. The main aim is to attain happiness, which can not be achieved as referred above. As per the teaching of Radhasoami faith, the way of living in happiness is only through Surat-Shabd-Yog. When one performs meditation the soul (Surat) remains calm and proceeds towards Radhasoami Dham by leaving the Chata Chakra, Daswan Dwar, Tisra Til, Shiv Netra i.e. Pind Desh and enters through Sahas Dal. This process is that the person has changed his mind from worldly ambitions and started taking interest the state of Brahamand & Nirmal Desh through Surat. To know and activate Surat towards the spiritual path is (Chetna) i.e. Consciousness. The state of living beyond Pind Desh is full of permanent happiness.

■ 365. DEPRESSION AND CONSCIOUSNESS

JOSIAH SHINDI, KANA SANI

This is a part of a report of an ongoing comparative survey of Depression among University students in Nigerian and Chinese Universities. 8,000 University students in Nigerian Universities and 10,000 students covering twenty Universities in China, participated in the study. Three instruments were used to study depression among participants; these

were: Beck's Depression Inventory; Jung Depression Inventory and Minnesota Multiphasic Inventory (MMPI). The preliminary results indicate that depression seems to be an altered state of consciousness in which the depressed focuses on him/herself with an aggressive but self-defeating punitiveness.

■ 367. CONSCIOUSNESS OF SELF AWARENESS THROUGH SELF INTROSPECTION AND STATE OF BEING QUIET IN PABLO NERUDA

RICHA SINHA, ASHOK KUMAR SINHA, MADHURIMA SINHA

Consciousness is the quality or state of being aware of an external object or something within oneself. It has been defined as: subjectivity, awareness, the ability to experience, to feel wakefulness, having a sense of selfhood, and the executive control system of the mind. In other words: "Anything that we are aware of at a given moment forms part of our consciousness, making conscious experience at once the most familiar and most mysterious aspect of our lives. The possible way offered is human realization to understand consciousness, for which one needs to spare time for self introspection and meditation. Similar line of thought has been treated and urged for by the Nobel laureate in Literature (1971) Pablo Neruda (real name: Neftalí Ricardo Reyes Basoalto) in his poetic creation "Keeping Quiet".

■ 372. SUBJECTIVE VISUAL EXPERIENCE AND NEURAL FIRINGS JOHN STROZIER

The eye is a transducer that encodes photonic visual information into neural spikes that are time dependent and proceed into the brain. The time dependence comes from the concatenation of a succession of visual frames in which each visual frame is a result of rastering the immediate (50ms) visual scene. The neural spikes over time can be represented by an operator $P(t)$. A straightforward method to build representational world model(s) in the brain consists of storing incoming neural spikes, $P(t)$, in a neural matrix in which the neural spike signal is rastered across a 2D set of memory units, one for each visual frame. Thus a 'movie picture' of a changing visual image can be stored as a set of 2D memory units. Note that in the gathering of sense data, neural spikes are directed inward from the sense organs to the neural operator that builds the world model(s). This process can be described analytically.

■ 414. RESPIRATION AND MEDITATION GOPI CHAND GUPTA

The first part of this paper presents the normal anatomy and physiology of respiration/ breathing and what happens to the brain during hyperventilation, hypoventilation and apnoeic states. The second part discusses respiration in diseased states especially in unconscious patients and those with ventilatory failure due to Brainstem and Neurological abnormalities. Finally the possible pathways used if required to oxygenate the body during meditation, underground/jal samadhi's and other apnoeic states will be presented.

■ 425. MICROTUBULE SIMILARITIES BETWEEN SINGLE CELL ALGAE AND HIGHER ORGANISMS: A REFLECTION ON CONSCIOUSNESS STATE

V. PAWANI, SHRUTI SINHA, SWAPNIL SHRIVASTAVA

Plants and animals are the two different kingdoms but at cellular level they are almost similar. If we talk of consciousness, both are at different levels. Microtubules are the structures which are present in both plant and animal cells, regulate many processes. Recent studies have implicated microtubules to be involved in the decision making process of higher animals and are also related with the consciousness states. There are some structures which are present in both plants and animals like eukaryotic cilia and flagella. These are thin hair like appendages which are present on the surface of most animal and lower plant cells. Cells use these organelles to generate movement and to sense and respond to the environment. Single cell algae such as, *Chlamydomonas*, radial spokes (RSs) present in the flagella play an essential role in the regulation of axonemal dynein activity and thus of ciliary and flagellar motility. In humans, defects in cilia and flagella are known to cause many diseases and developmental disorders (ciliopathies) such as polycystic kidney disease, respiratory disease, and neurological disorders. The structural basis of these organelles in both the algae and humans is same in the presence of nine outer doublet microtubules (hollow protein tubes) that form the cylindrical core of the structure known as the axoneme. This molecular architecture of doublet microtubules has been conserved in eukaryotes since their evolution. The structural details of these cilia and flagella have also been conserved. In the light of the structural conservation of such important cytoskeletal part the possible role of microtubules in consciousness states will be discussed with respect to the evolutionary status of algae and humans.

■ 434. SOCIAL, EMOTIONAL, SPIRITUAL LEARNING (SESL) TEST FOR ASSESSMENT OF CONSCIOUSNESS IN PRIMARY LEVEL STUDENTS

GUR PYARI MEHRA, NIJA MEHRA, DIVYA SHIKHA SETHIA

In spite of great strides made by mankind, it has been increasingly realized that the Physical world is not permanent and is subject to change and is thus the cause of unhappiness. The consciousness (or Spirit) is our true inner being and prime source of energy. Education today should not only prepare students for successful career or a Successful life but also to achieve eternal happiness, (Sat chit Premanand Prakash) the ultimate objective of life. An ideal education system should involve complete development of all facets of an individual, i.e., physical, mental, social, emotional and spiritual potential. It has been proved by researches that social, emotional and spiritual development are interwoven and integrated. However, in practice only social and emotional factors are taken care and investigations are made but in the absence of spiritual education and a well defined system of assessment for these three parameters, the end results are not achieved. The solution to all current problems of our times is Education and we need to increase the scope and quality of education and continue to make it perfect. The issues facing today's educators and students is daunting. The paper emphasizes on including paravidya that tells us truth regarding physical universe and the regions beyond it, right from the beginning i.e., primary school level and formulating a well defined system for assessment of social, emotional and spiritual learning for providing fertile grounds for development of higher levels of consciousness.

■ 443. ENGINEERING TOWARDS SCIENCE OF CONSCIOUSNESS AMOLAK PRASAD, CHARAN ADHAR

Just as aparavidya has the communication channels for understanding paravidya, the discipline of engineering in general and the electrical engineering in particular has the communication channels for understanding science of consciousness. Electrical engineering is all about potential or voltage, current and impedance. It also discusses electromagnetic fields in the context of electromotive drives. The fundamental axiom of macrocosmic / microcosmic spiritual consciousness talks about the omni-quantum spiritual force field of consciousness, quantum mind-force field and the quantum physical force fields- electromagnetic, weak nuclear, strong nuclear and gravitational. All arrangements in creation are carried through currents. Similarly, the entire economy of this physical body is regulated by currents, known collectively as the nervous system. Networks of currents spread out in individual systems / subsystems. Humans are wired in these networks and constitute its quanta in the quantum force-field. All jivatmas are the fundamental particles of the omni-quantum spiritual force-field, their minds are the fundamental particles of the quantum mind-force and the bodies are made up of the fundamental particles of quantum physical force-field. The currents are sent out by potential difference and are opposed by the circuit impedances. The creation came into being owing to the potential difference between the super positive pole of spirituality and the nether pole of depleted spiritual energy. When the potential difference reached the break-down point, there issued a huge commotion or upheaval that resulted in the first great spiritual current or Adi Chetan Dhar which started the first phase of creation. Subsequent phases of creation were also as a result of issuance of currents from the top of region of Universal Mind and the top of physical region. The entire creational economy can be explained in terms of electrical engineering; the human beings, being analogues of God, can similarly be explained in terms of electrical engineering. Science of consciousness is nothing but the science of spiritual potential, currents and the impedances. In other words, it is spiritual electrical engineering which would help us in understanding the science of consciousness.

■ 446. TOWARDS THE DEVELOPMENT OF A PROTOCOL FOR RECORDING AND PROCESSING OF KIRLIAN IMAGES FOR A POSSIBLE CORRELATION WITH THE CONSCIOUSNESS IN SMALL-DIMENSION INANIMATE OBJECTS EXPOSED TO VARIED PHYSICAL ENVIRONMENTS

ASHISH MANI, SAHAB DASS, ROHIT SHRIVASTAV AND VIJAY MALHOTRA

Consciousness remains a difficult term to define in precise intelligible terms, despite several theories propounded in the past to describe it in different perspectives. Even more challenging is to identify such directly observable parameters that can be correlated with consciousness and used as consciousness-indicators. Gas discharge visualization based on Kirlian photography deals with capturing bioelectrophotonic field generated around the objects, is widely reported in literature for its application in medical diagnostics. In a few recent reports it has been suggested that such images might also have some relation with the consciousness-level of the object. Based on the above hypothesis, investigators are working towards the development of a novel optimized experimental set-up for recording Kirlian images of small dimension inanimate objects. Further, neural networks and fuzzy logic based systematic computational intelligence techniques are being proposed to process the observed images for extracting imprecise features, which in turn would evolve meaningful numerical parameters that can be correlated with possible variations in the consciousness-level when such objects are exposed to varied physical environments. Preliminary experience and observations in this regard will be presented.

POSTER SESSION II

■ 4. CONSCIOUSNESS AS PER DISCOURSES OF THE LEADERS OF RADHASOAMI FAITH

RADHIKA SINGH, SHANTI GUPTA

The fundamental axiom of macrocosmic / microcosmic spiritual consciousness enunciated by Most Revered Prof. Satsangi, the present leader of Dayalbagh Group of Radhasoami Tradition is that the origin of the macrocosm is an infinite spiritual energy source or reservoir known as the Supreme Creator or Being or Super Positive pole accompanied by the omnipresent quantum spiritual force field of consciousness ranging from the Super positive pole of full spirituality to the Nether or Negative Pole of depleted spirituality; and each constituent fundamental particle of this omnipresent spiritual force-field, known as the spirit-force of consciousness, is the one which possesses prime energy and that all other forces (mental or physical) of creation or nature have been evolved by the association of this spirit-force with media (mental or physical) of different kinds. The concept of "spirit-force" is no more intrinsically mysterious than 'mass'. The concept of omnipresent quantum spiritual force field is very similar to that of magnetic field. All arrangements in this creation are being carried out through currents, whether the latter be visible or, not. Just as external creation is maintained by currents like the ones in a magnetic field, in the same manner the entire economy of this physical body is maintained by currents, known collectively as the nervous system. These currents are subtle in the subtle regions and gross in the regions of gross matter.

■ 13. VARIOUS LEVELS OF CONSCIOUSNESS

ANIRUDH SATSANGI, ANKITA SATSANGI, ACHRAJ SATSANGI

A Famous Hindi Poet Jai Shankar Prasad writes in "KAMAYANI"- "Ek Tattva ki pradhanata kaho use jad ya chetan". This is the most beautiful definition of physical and metaphysical (consciousness). Prof. Ashok Agrawala (2012) of University of Maryland has attempted to describe various levels of consciousness based on consciousness elements (CEs). He described consciousness as discrete and consists of consciousness elements which are the basic building blocks of consciousness. With each and every material object as CE is associated, only some aspects of the consciousness of the CE are accessible through physical measurements. The main instrument capable of sensing any features of CE or deriving some properties of it is the mind of a sentient entity- and even such a mind, depending on its development, can only access a part of the full attributes of CE. All the above descriptions of consciousness describe in one way or the other the different levels of consciousness i.e. from physical to non- physical or metaphysical. The present paper attempts to present comprehensive view of consciousness more logically.

■ 28. DEVELOPMENT OF HIGHER CONSCIOUSNESS AND SOCIAL MEDIA

RATAN SAINI, NIRAT, SANGITA SAINI

Today thousands of people, young and old are using Social Media to read and write the views on almost every topic being discussed on this planet. This leads to enhanced consciousness, wisdom, knowledge and people learn ways of living happily in this world and beyond. Popular figures like Dalai Lama, Deepak Chopra, Sri Sri Ravishankar and their

followers post very important information on social media, about facts and methods to live happily and reach higher levels of consciousness. It is observed that when people are depressed and are in grief, their friends and relatives help them by sharing very effective pieces of information and boost their morale and make them ready to face the situation in a positive manner. When some one is going through a bad phase, due to some illness or any other cause of worry, they are advised with correct steps to tackle the situation and it helps them in a very effective manner. There are instances of people getting help from far and wide places in the world and the suffering gets minimized. The paper presents case studies of such instances where social media helped in developing a higher level of consciousness and help live a happier life. It is concluded that social media has emerged as a very effective tool for enhancing the consciousness of people around the world and motivate them to act in the right way and enjoy better life.

■ 31. THE SYSTEMS OF EMANCIPATION OF DAYAL

PRATEET SINHA, NEHA S

Kaal is a part of the System of Dayal. These opposite polarities are designed to maintain the balance of the Universe. This papers merely features a few aspects of their relationship through some simple scientific phenomenon which we witness in daily life. This is also symbolic of how each phenomenon in the spiritual system manifests itself upon the physical universe tying the two with the same laws of creation, and is the cause that define the law of physics. Attempt is also being made to show some elements of the grand design working in the spiritual world via some basic experiments in physics.

■ 36. HOW REAL IS PERCEIVED FREEDOM IN FREE WILL ?

FRANZ KLAUS JANSEN

Freedom is a common perception in all free will experiences. However, classical physics supported the idea that the whole universe is determinist, which is in contradiction to the concept of freedom of the will. Compatibilists (overview McKenna) hold that free will is compatible with determinism, whereas incompatibilists (overview Vihvelin) required indeterminism for allowing free will expression, which is now in contradiction with classical physics. Therefore Wegner claimed that free will is an illusion. The conflict is due to an incomplete conception of “determinism” not including biological determinism and a sort of verbal dispute (Chalmers) concerning the meaning of “free” without considering the experiential context. Determinism was conceived by van Inwagen as an unbroken causal chain thereby resembling physical determinism. However, autonomy in biology rendered determinism much more complex. Autonomy like locomotion autonomy of animals is partial independence from physical environments, thus resembling a broken causal chain, which has periodically to interact with its environment for resource restoration. Multiple favourable or unfavourable alternative environments require a selection in a completely determinist system. If the selection is random, the animal’s survival is not warranted. Therefore, survival requires a mental selection system allowing the choice between favourable and unfavourable environments. In higher animals, all precursor conditions for human free will are realized through the presence of alternatives and the requirement of selection by a mental selection system. Thus, biological determinism is compatible with free will. The concept of free as completely undetermined does not correspond to experiential free will, since free will limited by a context is only relatively free, as illustrated by free decisions in the menu of a restaurant. Within their context, free decisions require knowledge and motivations to obtain a sense, a situation quite different from free decisions for lottery numbers. Knowledge is deterministically acquired from the society and motivations from personal experiences. Thus, free is limited to the period of deliberation only when in the

beginning multiple attractive alternatives appear, which have to be reduced by deliberation to only one realizable alternative. “Deliberation freedom” can be illustrated by a puzzle game. In the beginning there is the freedom to start with every piece, but at the end all pieces are in a determined order. Freedom limited to the deliberation period reflects the experience of individually perceived freedom, but does not correspond to the abstract concept of free as totally undetermined. Thus free will could be conceived as an illusion (Wegner). However, the experience of free will is not a false perception like a fooler, but a real perception of freedom. If a general reduction of experience to an abstract concept has to be considered as illusion, many other experiences like red, the sound or temperature have also to be considered as illusions, since red is physically an electromagnetic wave, sound a mechanical wave, and temperature molecular agitation. Only if experientially perceived free will is considered within its context and compared to biological determinism, free will remains compatible with determinism.

■ 49. CREATION AND THE YOGA OF DIVINE CONSCIOUSNESS

DHARAMPAL SATSANGI

Most religious classics and philosophical treatises set forth in precise and penetrating words the Divine purpose of Creation of the Universe. These principles are however abstruse and a way must be deftly navigated before truth can be understood. Man has been stumbling for eons to ascertain the true purpose of life and a practical path towards attaining it. Religious men devoid of Self Realization are all too common but they are unable to guide a true seeker. Seekers of Divine Truth have to train themselves with steadfast devotion until they become proficient in the exercise of mental concentration and develop almost complete control over their mental process. This is the Yoga of Divine Consciousness and those who have practiced it to perfection and have developed unison with Ultimate Reality, have become “The liberated Ones”. In the Eastern Religious Tradition they are called Gurus. This paper endeavors to present the efficacy of “Surat-Shabda Yoga” for consciousness elevation in the present times.

■ 60. AHIMSA: A GATEWAY TO SPIRITUAL CONSCIOUSNESS?

SMITA SAHGAL

Ahimsa literally means non-injury, but is has often been translated as nonviolence. However, neither non-injury nor nonviolence actually brings forth the correct meaning of the word in all its perspectives. Ahimsa is one of the central ideas of many Eastern, especially Indian religions. Its origin can be traced to antiquity but its relevance continues in the contemporary world. The topic has been chosen to unravel the sustainability of the concept through historical trajectory; from the time of its evolution to the present day. The enduring quality of ahimsa has to do with its inherent theological grain as well its societal application. Even as the topic is largely confined to its religious ramifications, an attempt would be undertaken to locate it in Socio-- historical frames as well. This would enrich our understanding on how the concept was received at the level of the populace and whether it did succeed in making the existent societies evolve spiritually.

■ 66. RISING TOWARDS SPIRITUAL CONSCIOUSNESS- FROM THE AKASHIC FIELD TO THE QUANTUM SPIRITUAL FORCE FIELD

CHHAVI GUPTA

The Akashic records is a term used in theosophy to describe a compendium of mystical knowledge encoded in a non-physical plane of existence, an “etheric place” where all knowledge of human experience and the history of the cosmos are stored. Accessing the enormous database of the Akashic Field can give us a wealth of information that will be useful to us in our search for enlightenment and truth. The Akashic records are metaphorically described as the “Mind of God”. Mystics and sages have long maintained that an interconnecting cosmic field exists at the roots of reality that conserves and conveys information. These quantum field theories will be discussed in this paper.

■ 73. MISTAKING LIMBS FOR STEPS IN THE 8-FOLD YOGA

ROBERT BOYER, PARK HENSLEY

Patanjali's Yoga Sutras in ancient Vedic literature describes 8-fold limbs of the one body of yoga, Ashtanga yoga. The single practice in Ashtanga yoga is transcending thought in the inner silence of samadhi (samyama). Vedic proponent Maharishi Mahesh Yogi has pointed out that the common interpretation of the 8-fold yoga as ‘steps’ to discipline mind and body on the ‘path’ to attain samadhi emerged once a systematic technology to attain samadhi regularly was lost. He has explained further that repeated experience of the state of samadhi fosters natural development of all the limbs of yoga together, but the other limbs are not steps to practice as preparation to be able to reach samadhi. Ashtanga refers to ‘eight limbs,’ which develop simultaneously with repeated experience of the eighth limb of samadhi; and natural progress in the other seven limbs validates this experience. This fundamental re-clarification of yoga is supported by extensive research on samadhi as the fourth state of human consciousness that results in a wide range of mental, physical, and social health benefits. Regular experience of the natural state of samadhi extends the means of gaining knowledge beyond experiences in the ordinary waking state of consciousness that characterize modern scientific epistemology.

■ 76. INVESTIGATION OF RELATIONSHIP BETWEEN CONSCIOUSNESS AND PERSONALITY

MAHARAJ KUMARI KANDIKONDA, HANS RAJ KANDIKONDA

Evolution of physical body is accompanied by evolution of two entities, mind and spirit which are distinct from the physical body. Our primary hypothesis is that the mind and spirit are evolving gradually and are the prime forces by which not only the physical body but the entire universe is sustained. The current study is an investigation of the relationship between consciousness and the Jung's personality types. Mind can be probed by well-known psychological tests. In present study SL-TDI is used to study Jung's personality theory of psychological types with an additional dimension of consciousness and materialism added to it. The participants are 85 University students (30 Girls and 55 Boys whose mean age was 20 years). All the students are given an integrated instrument of SL-TDI and Consciousness designed specifically for the current study. The results were statistically analyzed and correlations determined to study the grades of consciousness on personality types. Bi-variate correlation showed introversion is strongly correlated to Consciousness ($r=0.57$). Consciousness showed strong positive correlation with feeling and intuition ($r=0.52$ and $r=0.55$ respectively). The relationship between consciousness and Jung's personality variables is discussed.

■ 94. AN ENLIGHTENED SOUL IS SAVIOUR OF MANY SOULS

ASHWINI SATSANGI, GAGANDEEP NIGAM

Everybody is talking about spirituality. We believe that the food for the soul, urge for the soul, love of the soul is to merge in the great soul. Love of the spirit is to merge in this Great Spirit, but it is not in a position to do it because of karma. We have been taught, if we have money, we can make more go. But if we are in a mental desert of insecurity and non-reality we have not been taught what to do, and we get struck or unable to explain, we get spiritual weakness, spiritual sickness or what can be called “spiritual death”. Sikhism propounds the philosophy of self-realization which is possible by “aatam-cheennee” or aap “pashaanae”, purifying the self from the false ego.

■ 102. THE NATURE OF CONSCIOUSNESS ACCORDING TO THE UPANISHADS

DURGA PRASADA RAO CHILAKAMARTHI, DHARAMPAL SATSANGI

The nature of Universal self and the Individual self is described in the Upanishads as Truth, Consciousness and Bliss, Sat Chit and Ananda. Chandogya Upanishad declares that ‘The Self indeed is all this world. Upanishad states that Brahman indeed is the Universe. Chandogya Upanishad establishes the Unique-ness of Self. Brihadaranyaka Upanishad goes to the extent of ruling out the plurality of Self. All this universe indeed is Brahman, and there is no plurality in it. Mandukya Upanishad establishes identity between Atman and Brahman (Ayam Aatma Brahma). Besides this, Brihadaranyaka Upanishad emphatically establishes the unique-ness of Atman by stating that, there is no other seer but he, there is no other hearer but he, there is no other perceiver but he, there is no other thinker but he. He is your Self, the Inner controller, the Immortal(3-7-23). This paper discusses the Upanishadic view of Consciousness.

■ 108. OBSERVER- ACTOR: COACH- EXECUTIVE - QUANTUM INFORMATION IN BUSINESS DECISIONS

SWAMI SATCHIDANAND PRASAD SATYAVOLU, SUMATI PRASAD SATYAVOLU

Businesses are built on decisions. Decisions require both information, stimuli and a “processor” built on the training, coaching and value system. All scenarios cannot be perfectly modeled and programmed. The vantage point of observation and the individual with the unitary responsibility to decide are crucial, thus forming a strong co-relation with Quantum Theory. The Actor-the executive- has to develop and evolve his/her decision models constantly. Yet, the information deficiency and latency both affect the effectiveness and of the process as well as the ultimate outcome. This paper proposes a conceptual integrated framework for decision processes in business world. Advances and theories in decision making and their amalgamation with evolutions in information systems (mostly higher level analytics and computing paradigms) form the foundation for this framework.

■ 112. PHARMACODYNAMICS AND TRANSLATIONAL ASPECTS OF CONSCIOUSNESS

SEEMA BHAT, LAXMINARAYAN BHAT

The connection between the spiritual practice and consciousness has been acknowledged since the oldest of human civilizations and emphasized in almost all religions. In addition

to supreme bliss or enlightenment, spiritual practices offer unparalleled physiological, psychological and social benefits. Throughout the history of mankind, spirituality and religion have played a major role in healing a variety of physical and mental illnesses. However, the scientific study of spiritual phenomena has been a great challenge for researchers as it requires analysis of very complex subjective experiences accompanied by psychological and physiological changes in the body. Scientific studies have shown that spiritual pursuits bring neurological changes in the brain which can be attributed to different levels of consciousness. These neurological changes are responsible for psychological and physiological changes. Thus, one of the greatest challenges of modern neuroscience is to discover the neural mechanisms of consciousness and to explain how they produce the conscious state. It is very important to understand the pharmacology of consciousness phenomena to explain the neurophysiological and chemical changes in the body. We believe that spirituality is an important component of the healing process and should be integrated with conventional medicine. We present the pharmacology, expression and role of key receptors contributing to pharmacodynamics of consciousness. We also present the translational aspects of consciousness in treating various neurological, neuropsychiatric and metabolic indications.

■ 141. CONSCIOUSNESS FROM PHYSICAL TO SPIRITUAL IN THE FOUR DRAMAS OF PARAM GURU SAHABJI MAHARAJ- A COMPREHENSIVE STUDY FROM THE LITERARY-SOCIAL-PHILOSOPHICAL-SPIRITUAL PERSPECTIVE

SUGANDHA KHURANA

Param Guru Sahabji Maharaj, fifth Revered Leader of Radhasoami Satsang, Dayalbagh, penned four dramas, namely, Saran-Aashram ka Sapoot, Sansar Chakra, Swarajya and Deen va Duniya. The paper is a maiden attempt to map out the stages and process of consciousness, obstacles and their elimination projected in the plays through antithetical characters, anecdotes, symbols and metaphors and mystic overtones. The first play, Sharan Ashram ka Sapoot, is a sociological model which lays the groundwork for consciousness. Sansar Chakra is an enquiry into the phenomena of pleasure and pain which will lead to the search for the suitable means for the attainment of the ultimate bliss in Swarajya. It also brings into expression the dramatist's "notions about true liberty" from spiritual and political perspective to conclude that the "spiritual ideal includes the political ideal as the greater includes the smaller." The search for the spiritual ideal culminates in the final play, Deen va Duniya, which is a highly symbolical presentation of the emancipation of the spirit, the barriers it encounters and a true Preceptor who helps in the communion between the microcosm and the macrocosm. Apart from Consciousness, the plays share themes of death, freedom, life on earth, the significance of channels of sensory organs, intellect and mind, their differentiation and the supremacy of the soul or the spirit. Together they form an inextricable web which has been analyzed in the light of social, philosophical and spiritual theories like humanism, feminism, transcendentalism, positivism and the teachings of Radhasoami Faith.

■ 146. STREAM OF CONSCIOUSNESS FROM INDIVIDUAL TO SOCIETY

SONAM MEHTA, INDIRA SHARMA

Self and society are twins; we know one on knowing the other. The consciousness which drives the universe at both micro and macro levels is primarily the social consciousness. Social consciousness is the plinth on which the super structure of society can be built, and it does create such an aura that makes people not only attracted towards each other, but also make them feel the presence of each other in various walks of life so as to remain intact for a noble cause of the community. The beginning of the conceptual understanding phase emphasizes the 'con-' factor as a social fact. Consciousness means joint, or mutual, awareness. "To

be a friend and to be conscious are terms equivalent" (South, 1664). Karl Marx (1818-1883) holds that human beings enter into certain productive or economic relations and these relations lead to certain form of consciousness. It is not the sum total of individual consciousness; in fact it has a suprapersonal status, the social consciousness. The two types of consciousness told by Ned Block i.e. phenomenal and access consciousness also emerge as wonderful concepts relating with social consciousness. Social consciousness can shift the self centered world view to the one in which the individual considers himself as the integral part of the larger whole and he becomes more sensitive towards the society (and its members). The paper explains five levels of social consciousness namely embedded, self reflexive, engaged, collaborative and resonant consciousness in relation to the individual's cognitive and psychological powers and how to use them for the better worldliness.

■ 151. CRITICAL ANALYSIS OF DRETSKE'S TESTS FOR PERCEPTION AND AWARENESS

JAISON A. MANJALY, SUMITAVA MUKHERJEE

Whether perception without awareness is possible or not is one of the key topics in contemporary cognitive science. Dretske [Dretske, F. (2006), "Perception without Awareness", in *Perceptual Experience*, ed. Tamar Szabó Gendler and John Hawthorne, Oxford: Clarendon Press, 147-180.] offers an analytical discussion of the issue by trying to layout explicit conditions for perceptual experience and awareness separately so as to arrive at a scenario where Tp (test for perception) is satisfied while Ta (test for awareness) is not satisfied. We agree with Dretske that although receiving information is necessary, it cannot constitute a sufficient condition for perception. We, however, show that there is an inherent problem with 'reason' test of awareness. In the 'reason' test for awareness he claims that if information about X is available to S as reason (justification) for doing what she wants (chooses, decides) to do, then it qualifies as necessary and sufficient condition for awareness. We argue that this test of awareness does not hold if the result is interpreted from a third person perspective, because, the observer can never reliably interpret another person's intentions / reason to act as necessary and sufficient. It does not hold from a first person perspective either, because it suffers from the same problems of a subjective test of awareness proposed by Dretske.

■ 185. PROGRESSIVE INCARNATIONS

REENA MATHUR

The reality is very different from the perceived reality. To discover the truth behind the happenings in the world we need to channelize our thinking and awaken our consciousness. In addition we need to enhance the power of the inner eye so that we can establish correct facts and learn the purpose of this creation. Since four yugas the creator has from time to time as per the need of the situation, expressed his powers. He incarnated to awaken the spirit forces and to make them realize that they are a part of the Supreme Being. They taught the souls the importance of god and according to the need of that era taught them the best way to get salvation. The method of getting salvation was different in all yugas. All around the globe masses have experienced the power of incarnation. As and when the supreme being found that the souls have been denied the bliss and permanence and radiance of the realization of supreme being he incarnated himself on this earth. All around the globe masses have experienced the power of incarnation but still some people could not realize them as their consciousness was not upto the required level so they tried to interfere and dis-establish the entities.

■ 191. SPIRITUAL CONSCIOUSNESS AS DETERMINANT OF LIFE SATISFACTION AND LEVEL OF ANXIETY

GUR PYARI PRAKASH, RANJEET KAUR SATSANGI

Consciousness has been defined as awareness- awareness of everything that is happening around us. Consciousness has different levels and the levels of Consciousness make individuals different from one another in every respect i.e., in thinking, feeling, emotions, values, reception and personality. The present study was conducted on a sample of 200 educated men and women between the age range of 25 to 70 years. It was hypothesized that high level of Consciousness lowers the level of anxiety and increases the level of Life satisfaction. Analysis of scores obtained on the Anxiety Test, Life Satisfaction Scale and Spiritual Consciousness Inventory, indicated that the young generation possesses very high level of Anxiety, average level of Life satisfaction and moderately above level of Consciousness in comparison to their senior counterparts, who possess very high level of Consciousness, average life satisfaction and lower level of anxiety.

■ 214. IS OUR UNIVERSE A QUANTUM CONSCIOUSNESS COMPUTER?: AN APPROACH TO REVEAL THE UNIVERSE, EVOLUTION OF CREATION AND THE ULTIMATE REALITY

AASHNA PRAKASH, RASHI PRAKASH, SHASHI PRAKASH

The paper explains that, the study of the human cosmos would be the most practical and convenient method for a comprehension of the universal cosmos, and for determining roughly the various parts into which the creation has been divided, and for finding out the region of Supreme Bliss. It also discusses the three main factors of Human existence. Here, we state that the principles and philosophy of the Radhasoami Faith provides plausible solutions to these most fundamental and baffling questions for mankind left unanswered by Science, Radhasoami Faith reveals the existence of a spirit entity and the creation of the universe from the original abode – a huge infinite reservoir of spirit forces.

■ 227. SARBACHAN (NAZM): THE FIRST TEXT OF THE WORLD REVEALING THE MYSTERIES OF SUPREME CONSCIOUSNESS

PREMKALI SHARMA

Sarbachan (Nazm) has been created by Most Revered Shri Shivdayal Singh Sahab. He is the founder of Radhasoami Faith and is known by the name of Param Purush Puran Dhani Soamiji Maharaj. The first edition of Sarbachan was published in 1938. This was the time when the scientists were engaged in search of truth, taking the visible world to be the reality and truth. They were unaware of the fact that there is some power beyond this world, which controls all the activities of this world. They wanted to acquire knowledge but did not regard the spirit as the repository of all knowledge. As a result, new theories were being propounded without arriving at the Supreme Truth. The scientists did not know about the activation of the spiritual centres embedded within the body, instead, they concentrated on the senses and the physical mind. The different religious texts of the world like Vedas, Viney Pitak, Sutra Pitak, Bible, Quran etc. had access only till Brahmand. In the twentieth century, Param Purush Puran Dhani Soamiji Maharaj described 'Nirmal Chetan Desh', the abode of highest consciousness.

■ 228. CONTRIBUTION OF SANT KAVYA IN AWAKENING

GURPYARI SATSANGI, MEENU SINGH, SUKHVEER KAUR

The stream of 'Nirgun' devotional poetry by bhakti marg Saints like Kabir Sahab, Nanak Sahab, Jag Jeevan Sahab, Paltu Sahab and Tulsi Sahab has an important place in the realm

of Hindu literature. There exists a fantastic contribution of spirituality and practical knowledge by these saints. All these saint poets have tried to develop inner consciousness of individuals and enhance social values as a whole by adopting the “Surat Shabda Yoga” practices. They tried to abolish social evils, superstitions and malpractices which created mutual disharmony and differences among people in the name of religion. They tried to inculcate feeling of oneness among everyone, advocating the thought that everyone is a part of one Supreme Being. Saints propagated spiritual realism and religion. Apart from this they mentioned that good behavior, fair judgment, service, satisfaction are key elements in the personality of a spiritual seeker. According to their teachings, self consciousness can provide unbounded and incomparable spiritual power. To attain the state of mind it is essential to surrender to spiritual guru, practice Surat, Shabda, Yoga and adopt a simple lifestyle which would help a true seeker to attain self control. The finding of the study recommends that modern education policy should not only cater towards making one realize physical, academic accomplishment, but also focus upon developing spiritual faculties as well. Hence saint literature and poetry would become very beneficial in providing spiritual knowledge.

■ 251. CONSCIOUSNESS OF THE WORLD AND THE WORLD OF CONSCIOUSNESS

NIRAT S, SANGITA SAINI, RATAN SAINI

Consciousness is described as the ultimate mystery in ancient Indian texts and its study is lauded as the highest science. But until recently, the question of consciousness was considered to lie outside of the scope of science. Scientific attitudes towards consciousness have changed due to the recent advances in neurophysiology and because modern physics and computer science are confronted with the question of the nature of the observer. In many ways, the study of consciousness is center-stage in the discussions of modern science. On one hand, consciousness is termed as inner light and on the other hand it is compared with the physical light also. Physicists relate it with quantum mechanics whereas neurophysiologists term its evolution as a mental activity in the brain. As the highest level of human mental activity, consciousness is one of the basic concepts of philosophy, psychology and sociology also.

■ 260. DOES DAY AND NIGHT SHIFT INFLUENCE POSITIVE AND NEGATIVE TENDENCIES OF HUMAN MIND?

ARCHANA SATSANGI, RITU SHARMA

The purpose of the present study is to investigate the effect of day and night shifts upon positive and negative tendencies of human behavior. The positive and negative tendencies were measured in terms of organizational citizenship behavior (OCB) and aggression. OCB has consistently been shown to benefit both individual and organizational outcomes. Organizational citizenship behavior is the extra work related behaviour which goes above and beyond the routine duties prescribed by their job descriptions or measured in formal evaluations. The dimensions of OCB including altruism, courtesy, conscientiousness, civic virtue and sportsmanship show the positive tendency of human mind. Therefore organizational citizenship behaviour is extremely important in the present scenario where employees are regulated by negative approach of ‘Minimax Theory’ i.e. minimum the expenditure of energy and time, maximum is the gain in terms of money and power. The quality of cooperation, helpfulness, suggestions and selflessness are the qualities of conscious mind which help in developing human relations and organizational system as a whole. On the other hand aggression is treated as a negative tendency which is intended to commit harm to others and at the same time destructs one’s own personality and work output as a whole.

■ 261. GOD'S ARCHITECTURE: A COMPARATIVE REPRESENTATION OF CREATIONAL AND PHYSICAL SYSTEMS WITH SPECIAL EMPHASIS ON CHANGE MANAGEMENT AND CONTROL MECHANISMS

ANHAD KASHYAP

This paper attempts to embed the concept of Change Management in the framework of Quantum Mechanics, to understand the macro, as well as micro aspects of such change. To understand Change Management a comparison has also been drawn between the Creational System (as per Radhasoami Faith) and an Organizational System. An effort has been made to comprehend the underlying need for change and the mechanism adopted for such change. Differentiation between “forced change” and “voluntary change” through the exercise of “freewill” has also been attempted.

■ 269. UNPICKING CONSCIOUSNESS: BREAK AWAY FROM A HUMAN-ONLY VIEW

CARL ADAMS

This paper breaks down consciousness into basic building blocks, effectively capturing the likely attributes and sub attributes of consciousness. The paper tries to break away from a human-only view of consciousness. The paper discusses why the existing discourse on consciousness has been dominated by human consciousness. The paper also critically discusses and unpicks the discourse about consciousness that is interwoven with human consciousness - the languages, the metrics, the constructs. To this end the paper criticizes the existing granularity of conscious measurements and metrics which are fairly blunt: an entity is either conscious or not, meaning it is either ‘human equivalent’ conscious or not. By breaking away from a human-only view of consciousness and unpicking the different attributes and sub attributes we can explore the building block for consciousness (for instance, examine different senses, different ‘living’ environments, different cognitive skills and other attributes). We explore representing levels of consciousness for different animals with different senses and living in different social and physical environments. We also explore any different attributes of consciousness possible extraterrestrials (ETs) may have and what consciousness may mean for Artificial Intelligence (AI). Once we have unpicked attributes of consciousness we are able to apply the concepts back to humans to refine some of the definitions of consciousness.

■ 270. ARTIFICIAL CONSCIOUSNESS: AUTONOMICS, MEMES AND KILLER KANGAROOS

CARL ADAMS

This paper explores consciousness from a multidisciplinary perspective. It draws upon autonomic computing (which itself is informed by biological autonomic systems), draws upon the concepts of memes and information systems development (particularly the Object Oriented Approach thinking). The paper will look at some of the examples of sophisticated autonomic computer systems including large network systems, sophisticated robotic systems such as remote exploration units. The paper also shows how some of the advances in the computer side of autonomic systems are feeding back into our understanding of biological systems. The paper then explores the concepts of memes and memeplexes (groups of memes around a similar set of constructs) and refines thinking of memes as basic thinking tools. This draws on the work of Richard Dawkins and Susan Blackmore in their coverage of memes. It also explores further building blocks to consciousness from a memic perspective, and examines some of the current thinking and controversies surrounding evolutionary meme concepts. The concepts of reuse, abstraction and development of common structures are also applied to an evolutionary meme perspective. This leads on to

exploring more widely the concept of reuse in both biology and computer systems focusing on the Object Oriented (OO) approaches to software development which relies upon reuse of software modules. This is used to show how simple functions can be combined together to produce increasingly complex systems. The paper also discusses the amusing example of OO reuse covering the 'killer kangaroos' (an example of reuse code that supposedly proved embarrassing during a demo to Australian military top brass – this provides the base for the title of the paper). A key contribution in the paper is that it addresses the 'creator limitation' – the limitation of the computer programmer to write a computer program that is as intelligent, or more intelligent, than him or herself. Different approaches to the creator limitation are examined including neural networks and other AI approaches – which are compared to the autonomic computing perspective. The paper concludes with a discussion of basic building blocks of consciousness based on attributes of reuse and emergence of complex systems from grouping together simple subsystems.

■ 274. UNIFIED THEORY ON COSMIC CONSCIOUSNESS, LIFE, AND THE HUMAN RACE

OM VERMA

This article offers a new insight to define consciousness. It advances a theory of the origin and evolution of life, arguing that the expansion of cosmic consciousness, rather than the struggle for survival, causes evolution. The proposed theory in this paper could end the Evolution / Intelligent Design debate. The expansion of cosmic consciousness conceived life in the universe (the presence of suitable conditions alone cannot cause life). Cosmic consciousness forms the nervous circuit, which is the fundamental building block of life. We are all at a Pre-Human stage. There is not a single perfect human in the universe. Living organisms in other parts of the universe cannot be superior or inferior to those present on earth: the level of consciousness is equal across the entire universe. A perfect human from birth to the age of 24 years develops in the same pattern through which the human species has evolved over a period of 9600 years.

■ 289. TRAVERSING THE PATH OF LOVE: SPIRITUAL CONSCIOUSNESS AND KABIR

RENU JOSAN, PREM JOSAN

In India three ways have been generally followed for attaining salvation namely Bhakti Marg, Jnana Marg and Karma Marg. It is love for the Supreme Being which forms the epicenter of the Bhakti Marg, unlike the method of penance and mortification. Absorption in a single supreme passion may make the mind so concentrated that all the other attachments are transcended and the individual attains union with the Infinite. Krishna's Raslila with the Gopis is to be interpreted as the eternal, timeless and spaceless play of God with his own devotees. The devotee has to turn his love and desires towards God. Basically, an attempt is to be made by the individual soul to achieve union with God. In his love songs, Kabir has portrayed love between Jivatma (Individual soul) and Parmatma (Supreme Soul) where the former is presented as the beloved and the latter as the lover. However, the significant aspect to be noted is that it is not the pleasurable aspect of love that is emphasized; rather it is the pangs of separation from the lover that is the divine soul and the intense desire for the divine vision which forms the core of love poetry of Kabir. The common image projected in Kabir's love poems is that of a young maiden ardently longing for the meeting with her husband so that she becomes suhagini (attain Divine Communion). Kabir's conception of divine love is basically an original synthesis of the Yoga and Sufi traditions, the former exalting human efforts and the latter emphasising the torments suffered by the exiled soul in its mortal condition. In mystic love there is no trace of carnality but a spirit of complete surrender and abnegation, whereby, the self is obliterated only to be merged in the Divine Self. The mystic is a lover par excellence and his soul never forsakes his beautiful one whom he loves and esteems above all. The thrust of the paper lies in exploring the contribution of Kabir towards developing spiritual consciousness among human beings and awakening the soul to the bliss of higher spiritual realms, through the medium of his love poems.

■ 295. THE REALISATION - AIM OF HUMAN LIFE

P SINGH

Realisation is the development of spirit current in the mind. To achieve this super stage of mind (Realisation) is difficult, but more difficult is to control and maintain the same stage for a long time. The entire war between the artillery of KAL (Kal means ant forces against spirit forces) and DAYAL is long one but in the end KAL must yield and Surat must reach its Nij Desha and now Human Being attains the stage of Realisation which cannot be expressed in words because that is ANAND and only Human Body realises the same. Consciousness, awakening of soul and Realisation; all are useful tools for developing good thoughts within Human Body. Good thoughts eradicate evils in the society and this will undoubtedly make a better world order.

■ 316. DEVELOPMENT OF QUANTUM NEURAL NETWORKS TO EXPLAIN CONSCIOUSNESS

DRISHTI MALHOTRA, DAYA MALHOTRA

A burning question in present day scenario is, can consciousness be explained by modern computation and modeling techniques? With the development of neural network theory, the mathematical basis needed to model processes as complex as those of the human brain and to simulate these processes in computers has become available. However, neural networks alone cannot explain consciousness. How can one incorporate the qualities of the objects and ideas we perceive, such as colors and smells, or pain and pleasure? These feelings go a long way in providing for a unified experience. A neural network may recognize objects but it cannot respond with a unified experience. On the other hand, since quantum theory is the most fundamental theory of matter that is currently available, it is a legitimate question to ask whether quantum theory can help us to understand consciousness, once we accept that consciousness, or more generally, mental activity, is in some way correlated to the behavior of the material brain. Hence a delicate interplay of several different types of processes (neuronal, sub cellular and quantum) each with its own hierarchical organization of information needs to be developed. This paper deals with this and such other questions and attempts to find answers to them.

■ 349. IMAGINAL PROCESSES AND COGNITIVE DISTORTIONS: AN EMPIRICAL STUDY ON INNER EXPERIENCE

NAVYA PANDE, SANDHYA GUPTA

Consciousness relates to and keeps us connected to the external world surrounding us. It not only refers to experience of external environment but also to inner experiences. Daydreaming is a short-term detachment from one's immediate surroundings, involving task-unrelated mental activity. It may involve drifting of attention from external environment toward one's private thoughts and feelings, due to which mind keeps on wandering. Daydreaming may involve either imagery or thought. Sometimes mind wanders so much that hopping of thoughts occurs, acknowledged by Singer and Antrobus (1970) as mentation which is an imaginal process involving racing thoughts and rapid jumping from one thought to another with or without conscious awareness. Daydreaming becomes fantasy when the mind wanders on attractive themes, for a relatively longer period of time, reflecting loss of contact with reality. Mental imagery is an important construct which often facilitates imaginal processes. The present study investigated the effect of daydreaming and imagery on thought suppression and thought control, mindlessness and automated thoughts. For this purpose, 3 (Daydreaming: mind wandering, fantasy) x 2 (Imagery: visual and auditory) factorial design was used. Daydreaming was found to be a significant factor affecting mindlessness, thought suppression and thought control. Role of imagery in influencing mindlessness, thought suppression and control was also seen.

■ 352. A HYPOTHESIS FOR CONSCIOUSNESS

HASMUKH K. TANK

Consciousness is generally studied by most of the researchers in terms of 'processing of information' by the neurons, whereas it is hypothesized here that 'consciousness' emerges from the 'balanced electrostatic-field' which get produced in the brain. Such a balanced electrostatic-field can also be present outside the human body. Possibly, the 'space' may not be a 'void extension of nothingness'; rather, there can be some ultimate reality, which is present everywhere in space. Consciousness may be the nature of the ultimate reality. What our body and brain learn in the process of evolution, is to filter-out and extract only some limited part of perception which is important for survival. A fundamental particle like the 'electron' is conscious of its surroundings and itself for all the 24 hours and seven days a week. Through the process of evolution, what we have learnt is to inhibit irrelevant parts of perception!

■ 422. D.E.I. EDUCATION POLICY - A STEP TOWARDS CONSCIOUSNESS

PAYAL MATHUR, ANUBHAV BHATNAGAR, VAIBHAV BHATNAGAR, RASHI BHATNAGAR

Our society believes that besides the five senses, man is endowed with higher hidden senses. We know that it is not enough to rely on five senses as the knowledge derived through them is helpful only to a certain limit. Hence developing our hidden senses gains prime importance. People performing sadhanas for developing them are blessed sooner or later with spiritual experiences which bring about a tremendous transformation in their life. With the acquiring of higher consciousness, one gains real experience of religion and real teaching of religion. To gain ultimate consciousness, one must have concrete experience of unit of spirituality, without which understanding of Universal Spirit is impossible. Thus it is like tasting small sugar cube and magnifying its effect to understand the sweetness of the dish to provide this sweet taste during Brahmacharya phase of life, Dayalbagh Education Policy has been devised which engrains awareness, harmony, development of heuristics, endurance, tolerance, dignity of labor and puts the student in a place to lead a disciplined life ahead to awaken his consciousness to be closer to the Universal Spirit. This is implemented through different policies and courses conducted on the University campus which help the student to be aware. Being aware is the first step to consciousness and D.E.I. Education Policy helps its students to take that very first step.

■ 423. QUANTUM LEAP IN SELF-CONSCIOUSNESS

SWAPNIL SHRIVASTAVA, V. PAWANI, SHRUTI SINHA

If we look at Creation, it exists without the functioning of self. Therefore, there is intrinsic intelligence in Creation. Learn from Creation to function without bringing in 'I'. Can one break the psychological groove surrounding the self or 'I'? This is a spiritual challenge, and this questions all that we know. If this understanding happens, there will be a quantum leap in our insight. A French entomologist conducted a breathtaking experiment using processionary caterpillars that travel in a long line with the same pace and rhythm, giving no attention to the final destination. They follow their leader. The entomologist took a giant flower pot and placed a large amount of food at its centre. Then, he placed the caterpillars onto the rim of the flower pot. After some time, he could not find out who was the leader as the creatures were moving in the circles one behind the other. Even after seven days and nights, they were moving on the rim and did not break the pattern to eat the food in the centre of the pot. In the end, they died of starvation and exhaustion. Their source of life

was visible yet invisible. They could not alter their habitual and instinctive processional instinct. This is true of us as well. We get caught in patterns and end up unfulfilled.

■ 424. UNDERSTANDING CONSCIOUSNESS

RAJINDER SWARUP

Consciousness is personal. Indeed it is so close to the core of our being that it puzzled thinkers from the beginning of recorded history. To understand Consciousness to a greater depth, it is important to wed Science with Biology as well as Psychology and Philosophy. But unfortunately we are struck by the lack of communication between different streams of studies and research cultures. Neuro-Science researchers could learn from philosophers and vice versa. Neuro-scientific data on one hand, and insights stemming from first person experience on the other hand, as is the currency of spiritual traditions, can help understand consciousness. The content of Consciousness encompasses all that we are conscious of, aware of or experience. This includes not only experiences that we commonly associate with ourselves, such as thoughts, feelings, images, dreams, body, sensation and so on but also the experience 3-D world (The phenomenal world) beyond the body surface. Mind refers to psychological states and processes that may or may not be conscious.

POSTER SESSION III

■ 2. PARAVIDYA AND MANAGEMENT: ANTECEDENTS AND CONSEQUENCES (A SELECT STUDY OF RADHASOAMI FAITH AND DAYALBAGH AGRICULTURAL OPERATIONS)

SHANTI SWARUP GUPTA, SANJEEV SWAMI, P SRIRAMAMURTI

Para Vidya is the science of ultra-transcendental spirituality, training, and development of the spirit force. This may well be the unifying force that the scientists have been searching for, but appallingly neglected thus far. This neglect has resulted in chronic malaise of spiritual and moral impoverishment with corresponding material aggrandizement and avarice manifesting in several forms of corruption. The corruption, worldwide, has taken many ugly forms including moral turpitude, greed, social evils and economic offences. Indeed, the greatest tragedy of present day management is the spiritual emptiness of modern organizations.

■ 24. EMANCIPATION OF THE STONE

GAZAL MATHUR

Panpsychism is not a modern world view but can actually be traced back to pre-Socratic times. It promotes the view that mentality extends from humans to animals, insects, plant cells, and other natural bodies exhibiting persisting unity of organization. Although the debate continues on various aspects of panpsychism, the prevailing premise is that from the beginning of the universe, all things – even the natural inanimate (stone, water etc.) - embrace a fundamental mentality or consciousness. This is a divergent viewpoint when one takes Emergentism into consideration, which denotes the emergence of consciousness from matter and holds that the mental, in fact, emanates from matter, but the door is fast closing on the viability of this theory.

■ 30. MEDITATIVE STAGES, HYPNOSIS AND SELF-HYPNOSIS A MEANS FOR ENTERING OUR INNER EXPERIENCES

ANIRUDH KUMAR SATSANGI, PAOLA BRUGNOLI, ANKITA SATSANGI

We consider consciousness as a spectrum from comatose or unconscious to hyper-vigilant, extremely alert wakefulness and meditative states. Hypnosis is the manipulation of consciousness during wakeful state of consciousness. Hypnosis, or trance, allows us to communicate more directly with the subconscious part of our mind. Clinical Hypnosis can be defined as: a special psychological state of consciousness, with certain physiological attributes, resembling sleep only superficially and marked by a functioning of the individual at a level of awareness other than the ordinary conscious state. According to «state theory», it is a mental state. Hypnosis is usually induced by a procedure known as hypnotic induction, which is commonly composed of a long series of preliminary instructions and suggestions. Hypnotic suggestions may be delivered by a hypnotist in the presence of the subject, or may be self-administered («self-suggestion» or «autosuggestion»). The use of hypnotism for therapeutic purposes is referred to as «hypnotherapy», while its use as a form of entertainment for an audience is known as «stage hypnosis». Some hypnotists conceive of suggestions as being a form of communication directed primarily to the subject's conscious mind, whereas others view suggestion as a means of communicating with the «unconscious» or «subconscious» mind. Cognitive behavioural hypnotherapy (CBH) is an integrated psychological therapy employing clinical hypnosis and cognitive behavioural therapy (CBT).

■ 95. MONEY MODULATES ATTRIBUTION OF AGENCY

NEERAJ KUMAR, SUMITAVA MUKHERJEE, JAISON MANJALY

In our daily lives, we encounter various sensorimotor events, in which sensory perception and actions are intertwined. The sense of agency for a given action refers to the sense of authorship regarding that action. Computational models of motor control suggest that prediction of sensory information by internal models is matched against subsequent sensory information. If predicted and sensed information match, then the sensory events are self-generated, and the subject experiences a sense of agency for those events. If there is mismatch, then subjects attribute the outcome to an external cause/agent. Central feedback mechanisms play significant roles in the motor control and self-attribution of agency. Previously, we found that external feedback about the action can alter the attribution of agency before assimilating the actual sensory consequences, by updating motor predictions in real-time.

■ 104. THE MATRIX OF CONSCIOUSNESS: THE SPIRITUAL DOMAINS VIS-À-VIS MAGNETIC DOMAINS OF WEISS

SURAT KUMAR, KAVITA KUMAR, BHAKTI KUMAR

The binary nature of tubulin having bipolarity among α subunits (exposed with + polarity) and β subunits (exposed with – polarity), as shown by Desai and Mitchison (1997). The respective arrangement of α tubulins and β tubulins imparts the + and – polarity to microtubule. There occurs assembly and disassembly at the + and – end of microtubule referring to the 2 switching phases of microtubules, which work in tandem to furnish quantum level manipulations in matter to induce the spirituality through resonance coupling among 10^{17} tubulin electrons of human brain.

■ 111. SPIRITUAL ENERGY HIERARCHIZATION, DETECTION AND UTILIZATION: AN EVOLUTION OF HOMO SPIRITUS

RICHA SATSANGI, MANEESH GAURAV, RASHTRA GAURAV

Universal life energy (Spiritual force field) permeates every living thing, including the air, our planet, the atmosphere and all of nature. The flow of this energy connects everything that exists, and is being constantly absorbed by humans at every moment. This vital energy keeps us alive and healthy, though the inward flow of this can be increased at our will which helps in gaining spiritual experiences. Using non invasive techniques, proper hierarchization of spiritual energy is available, along with map of different levels of consciousness. Modern day science primarily concentrates only those activities which are considered as force (energy) viz. chemical, atomic, nuclear etc.

■ 128. INFORMATION INTEGRATION IN SWARM-BOTS AND MACHINE CONSCIOUSNESS: A SYSTEM OF SYSTEMS

ANURAG MAYANK, DHURV BHANDARI, AGAM BHAMRA, AKSHAR SRIVASTAVA, SANDEEP PAUL

This paper attempts to explore into the intricate subject of consciousness within the framework of system of systems engineering, experimenting and illustrating with a simple example of swarm-bots. A team is always better than an individual. It is more efficient than single person's efforts. Similarly, in the case of a robot which is left in the real world with partial or no knowledge of the surroundings, its individual skill will be of very limited use to perform all the tasks required out there. Swarm-Bots or a group of robots with diversified

skills will be of much more importance. The paper brings out the significant relationship between consciousness and information integration in swarm.

■ 133. USING RELIGION HAND IN HAND WITH SCIENCE TO PERCEIVE REALITY

SHIKHA VERMA, ASHA JUNEJA

This paper brings to light the fact that since time immemorial both science and religion have been trying to find the Ultimate Truth and Perceive Reality. Though there are differences in their ways, the quest is still ongoing on both sides. The aim of the paper is to discuss the perception of both and attempt to find out how science and religion can use each other to find answers to inevitable questions like Creation and Consciousness. The attainment of knowledge by science is Apra Vidya. It is empirical knowledge and is knowledge derived from the physical senses and pertains only to this physical world or material plane. Knowledge derived from esoteric experimentations and research of the Rishis and Saints is Para Vidya. It is Supreme knowledge, by which everything else becomes known. It pertains to the regions beyond our physical world and is derived by making kinetic the latent spiritual faculties that exist in man through meditation or sadhana. In ancient cultures, people acquired both types of knowledge, Para Vidya and Apra Vidya. This is evident by the scientific discoveries made in the Vedic Age like the calculation of speed of light in Rig Veda (7000 years back) = 187945 miles/sec or discovery of the fact that an year is made of 365 days divided into 12 equal parts of 30.

■ 138. PEACE, SPIRITUALITY AND CONSCIOUSNESS: AN INTEGRATED APPROACH

SAVITA SRIVASTAVA

Confucius forecasted, "If mankind would be governed justly but for a single Century, all violence would disappear from the earth". The cause of peace is furthered through education. It is a universal responsibility of nations to assist each other, in the quest to achieve free and compulsory quality education for all. In the broader sense, education means to build the 'culture of peace', learning and practicing the skills of active non-violence, of dialogues, of tolerance and solidarity respect for human rights and the constant struggle for justice: are the main keys. The nations of the world, gathered at the General conference of UNESCO in 1995, declared that the major challenge at the close of the twentieth century is to bring about the transition from a culture of war to a culture of peace.

■ 145. PERCEIVED TRANSFORMATIONAL LEADERSHIP EFFECTIVENESS IN RELATION TO LEVEL OF CONSCIOUSNESS: A CO-RELATIONAL ANALYSIS

VAIBHAV CHAUHAN, SADHNA SHARMA, NANDITA SATSANGEE

The present empirical study was structured to study the relationship between the leadership effectiveness of teacher trainees as perceived on their own as well as based on their view about how others perceive them and their level of consciousness, as conscious leadership is the demand of present education system. The descriptive survey was conducted on 100 teacher trainees (50 males and 50 females) selected with their consent. The level of consciousness of teacher trainees was assessed using consciousness quotient Inventory by Brazdau. To measure Perceived transformational Leadership effectiveness Multiple leadership questionnaire by Bernard M. Bass and Bruce J. Avolio was employed to assess leadership effectiveness in seven different factors of leadership. Pearson's Product moment Correlation was used to find out correlation between the scores on six dimensions of transformational leadership and consciousness quotient. Results indicate a significant positive correlation between transformational leadership effectiveness and Consciousness

of teacher trainees. Also an increment was noticed in the magnitude of correlation from laissez faire style of leadership to idealized influence. Moreover, conscious leaders were found to have a more humane touch in their leadership style.

■ 153. MEMORY AND CONSCIOUSNESS IN LITERATURE (WITH SPECIAL REFERENCE TO DOUGLASS' NARRATIVE OF THE LIFE OF FREDERICK DOUGLASS AND TONI MORRISON'S BELOVED)

PREM KUMARI SRIVASTAVA, UMANG SRIVASTAVA

Using 'Memory and Consciousness' (Tulving, 1985) as a frame, the purpose of the paper is an attempt to relate memory to consciousness through the reading of two distinctive American texts set wide apart from each other chronologically: Narrative of the life of Frederick Douglass (1845) by Douglass himself, a memoir of an ex-bondman and Toni Morrison's Beloved (1987) a Nobel prize winning novel set in 1873 about the aftermath of slavery. The fact that memory and remembering has a significant role to play in each one of them, this literature becomes a memorabilia of events gone by and a demonic past that impinges upon the present. In both cases 'rememory' (when memory is revisited whether physically or psychologically) transforms memory into a property of consciousness. In Douglass' narrative 'rememory' functions in multiple ways: it becomes an exhibit of America's 'peculiar institution' (Baker 1982) of slavery in the abolitionists' assemblies of its times; for a race beleaguered and battered such as the Afro-Americans, its purpose serves as a re-instatement of a consciousness of their natal culture and values; and finally works as a testimonial of intellectual prowess of a race deemed, 'chattel personnel.' In Morrison's Beloved, the unconscious presence of an 'invisibilised context' affects the 'living' consciousness of its characters.

■ 160. THE PARTNERSHIP BETWEEN ORGANIZATIONAL CONSCIOUSNESS AND ORGANIZATIONAL CULTURE A CASE STUDY FROM THE INDIAN POWER SECTOR

PREM PRAKASH SRIVASTAVA, UMANG SRIVASTAVA

The purpose of this paper is to develop a practical understanding of organizational consciousness (Pees, Shoop & Ziegenfuss, 2009, Barrett, 2011) and its linkages with organizational culture, and to present a case study from the Indian Power Sector. The various organizations of the Indian Power Sector are engaged in their respective mandated domains, each complementing and/or supplementing the other. The term 'culture' is often used to describe the dominant work environment of an organization, but what actually makes up 'culture' and how it is created is difficult to identify clearly. The strategies and practices furthered by the top management of an organization is the motive force that creates and nurtures the culture of an organization. For this study, some typical organizations from the Indian Power Sector would be selected and an attempt would be made to identify and isolate some dominant indicators and impacts of conscious top management practices for developing culture. By this process the partnership between organizational consciousness and organizational culture will be clearly brought out.

■ 164. EMANCIPATION AND PEACE---SURE MEANS TO ATTAIN THE HIGHER CONSCIOUSNESS WITH REFERENCE TO THE WASTE LAND AND THE MAHABHARATA.

NAMITA BHATIA, SOAMI DAS BHATIA

Consciousness to most philosophers connotes the relationship between the mind and the world, between the mind and God, or between the mind and deeper truths that are thought to be more fundamental than the physical world. When a pure drop of rain falls from the

sky and comes in contact with matter, it gets mixed up with matter, thus losing its original purity. Similarly, when a living entity comes in contact with material nature its original Spiritual Consciousness becomes covered up by matter. To realize its pure unadulterated consciousness, the soul needs Emancipation from the bondage of material consciousness and has to be released from the layers of matter. This Emancipation can be attained by the sense of renunciation. The Waste Land of T.S. Eliot and The Mahabharata of Ved Vyasa, indirectly suggest that renunciation results in emancipation and peace which surely lead to the realisation of Higher Consciousness. The major poetry of T.S. Eliot concerns the deteriorating modern conditions due to lack of religiosity or the lack of true love in man for man. The theme of the poem encompasses simultaneously several levels of experience arising out of various waste lands as the waste land of religion in which there are rocks but no water.

■ 166. MATHEMATICAL ANALYSIS OF THE WORDS, SOUNDS AND LIGHTS OF SPIRITUAL MOVEMENTS

PRAKASH SAHNI, POOJA SAHNI

Spiritual movements, such as Sant Mat, describe various phenomena such as words, sounds and lights. Although the claim is that these phenomena are spiritual, physical phenomena are used to describe them in the literature. We analyze these physical phenomena using mathematical and physical methods such as frequency domain analysis of mechanical and electromagnetic waves.

■ 175. INTERSECTING UNIVERSAL CONSCIOUSNESS WITH EXPERIENCES, EXPERIMENTS AND INTUITIVE CONSCIOUSNESS WITH SPECIAL REFERENCE TO THE DISCOVERY OF GOD PARTICLES AND UNIVERSAL CONSCIOUSNESS

SOAM PRAKASH

Recent discovery of God particles after many attempts and deliberations can be made a foundation stone for future discoveries in many fields on similar lines. The presence of finer sub-atomic particles is to be examined also for consciousness modular studies (von Newmann and Strapp formulations, Penrose–Hameroff model of Orchestrated objective reduction theory, Satsangi's Omni-Quantum theory for spiritual consciousness system modelling in Cosmology) and role of these particles in consciousness synthesis and emergence and manifestations. A fresh approach is, therefore, warranted to examine also the Spiritual system and X-across variables like spiritual potential difference and Y-through variables (flow variables like spiritual force current). This could be examined by taking first person experiences, scientific experiments and in anatomy of universe. The similarities in many realized persons, scientists and saints and super human beings have not been considered so far as true evidences which can be verified through developing intuitive consciousness.

■ 184. MEDITATION, QUANTUM PHYSICS, CONSCIOUSNESS AND ONENESS

SANJAY SRIVASTAVA, SANDEEP KUMAR

In the recent years there are lot of research activities on the consciousness to understand its origin, nature, and functioning. The role of quantum physics in explaining the mechanism of consciousness, or the role of meditation in the expansion of consciousness, or the Oneness constitutes important research studies, both in the field of physical and biological sciences. The search for "General Unified Theory" or "The Theory of Everything" is an effort in that direction. The Quantum Field Theory or the String Theory tries to explore

the ephemeral nature of Nature by uniting the special and general relativity with quantum theory within the laws of physics. The way of creation in nature is dualistic in principle; the ceaseless process of creation and destruction of the particles is an unwritten law of the Nature. Consciousness which is fundamentally a spiritual process, leads us to the Reality—the Oneness. We the part of the ephemeral phenomenon continue to be bound to the cycle, till the uprising consciousness helps us to raise our consciences from the earthly binding duality, to the reality of Oneness. The activity of meditation, “action-in-inaction” is a very fundamental process, discovered by the sages of Bharata, and is very central to the discovery of “Self” that directly leads to Reality—Oneness among the diversified fields. Mediation, by way of expansion of consciousness, leads to Oneness; and may be described in the language of quantum physics. It leads us to the higher-state of consciousness in which duality dissolves, space-time dissolves; and one has undifferentiated continuum of consciousness. Oneness with the “Self”, and one discovers the Source from where the universe springs out—a phenomenon of scientist’s beloved imagination associated with the creation of universe—The Big Bang.

■ 193. MANAGING CHANGE THROUGH CONSCIOUS LEADERSHIP

MAHESH OHRY, DEEPAK OHRY

The paper examines the application of consciousness in aiding leaders and managers in the West to successfully manage organizational change in Corporate and not-for-profit entities. We are all familiar with Isaac Asimov’s quote: “The only constant is change...” Organisations face more change today than ever before, seismic changes, driven by a range of factors: Economic turbulence from ailing European economies with poor growth prospects and progressively stronger Asian economies; Technological change from internet, mobile and social media tools; Environmental impacts from changing weather systems with resultant super-storms, tsunamis and earthquakes; Geo-political shifts through the effects of war, conflict and uprisings like the Arab spring. These singly or collectively place demands on organisations to rapidly adapt and thrive or be consigned to the footnotes of history.

■ 195. INTUITION AND HIGH LEVELS OF SPIRITUAL CONSCIOUSNESS

SUMIRAN SATSANGI, SHIPRA SATSANGI

A man can develop to his full potential by learning to be intuitive, inclusive and humane—the kind of skills that are not taught and are also difficult to teach. Intuition is a vast storehouse of knowledge which we all possess without knowing about it. American psychologist Frances Vaughan pointed out that at any point of time, we are conscious of only a small part of what we know. There is below that conscious part a reservoir of knowledge we all have. But we can achieve that once we focus and make effort to listen to that inner voice which is constantly guiding and helping us to become better human beings and realize the ultimate truth. Intuition becomes more efficient as we become more open to our feelings, and more secure through experience in its abilities to provide the correct cues. Intuition is a powerful tool in achieving high levels of spiritual consciousness and thus brings us closer to reality. Intuitive instincts come with practice. The paper would try to establish that men and women who trust their inner voice and practise intuition in real life tend to achieve high levels of spiritual consciousness.

■ 211. VISUALIZING A CONSCIOUS ECONOMIC SYSTEM TO REALIZE A BETTER WORLD ORDER (NEED FOR A PARADIGM SHIFT FROM MATERIALISM – ETHICS - SPIRITUALITY)

JYOTI GOGIA, DEEPAK GOGIA

The paper portrays how the present global economic system is diverging from its aspiration, and essentially it requires shifting from materially conscious system to ethically conscious system and finally to spiritually conscious system, which shall attempt to meet the real needs of life and establish a better world order. The paper stresses upon the significance of practising Ethics and Spirituality with Economic principles by and for the human society which is the major constituent of the economic system.

■ 229. PROFESSIONAL AND ETHICAL CONSCIOUSNESS AMONG ORGANIZATIONAL DEVELOPMENT PROFESSIONALS

SANJEEV BHATNAGAR

Organizational and Human Systems Development (OD-HSD) is a professional network or community of professionals whose practice is based on the applied behavioural sciences, a human systems perspective, and both human and organizational values. Ethics of the workplace is a major factor in the development of the operational value systems of employees and affects how young executives prioritize values in making decisions. From a management perspective, behaving ethically is an integral part of long - term career success. Wide access to information and more business opportunities than in the past makes ethics a need in modern business world. Leaders and managers require more practical information about managing ethics. Managing ethics in the workplace holds benefit for leaders and managers. Professional societies should encourage their members to integrate their theological inclinations with the appropriate ethical codes. Before a code of professional ethics can be formulated for business managers, it must be understood why management should be considered a profession and what should be its central mission.

■ 230. CONSCIOUSLY INCREASING CONSCIOUSNESS AND THEREBY HAPPINESS: THE INTEGRATED, UNIFIED AND SYSTEMIC MODEL OF CONSCIOUSNESS APPLIED IN ORGANIZATIONAL CONTEXT

VIKAS RAI BHATNAGAR, MAHENDRA SINGHI, SHEENA BHATNAGAR, RAJEN. K GUPTA

The paper uses insider action research (IAR) methodology for developing a holistic approach for increasing consciousness and thereby happiness of people. The Integrated, Unified and Systemic Model of Consciousness developed in an earlier action research is used in current action research leading to development of Intentionality as a metaphor for understanding organizations and designing and implementing a Happiness Management System (HMS). While the HMS is being action researched and implemented in an Indian cement company, this paper creates knowledge on how by conscious interventions and application of the oriental theory of actions or karma, bhakti or devotion, gyan or knowledge and raja yoga or meditation, consciousness and thereby happiness of people can be consciously increased. Organizations consciously increasing the consciousness and happiness of people will deliver on the dual purpose of achieving the ultimate purpose of human life as well as organization's purpose. Such organizations may be labeled as the Wise Organizations of future, which would-- apart from creating wealth and enabling spiritual emancipation of people, be also socially contributing, ethically sound and ecologically sensitive. The uniqueness of this action research lies in creating knowledge and partially executing it

in an organizational context that holds promise for increasing consciousness and thereby happiness of people. The paper also lays foundational thoughts on Wise Organizations of the future by utilizing the advancements made in consciousness studies and in applying them in the context of management science.

■ 244. AN ANALOGY FOR CONSCIOUSNESS AND ITS ELEVATION

PRADEEP KUMAR MATHUR, VASANTA MATHUR

We have endeavoured to understand Consciousness and its Elevation through an analogy, wherein the human being has been compared to an atom and consciousness to an electron. Consciousness (i.e. Spiritual Energy) of an individual's Spirit can be compared to the Energy of an electron. Further, just as an electron is held within an atom by the pull that the nucleus exercises on the electron, so also the individual's Spirit is held in this physical world by the pull that mind and matter exercise on the Spirit.

■ 246. THE USE OF QUANTUM FORMALISM IN COGNITION: A STUDY OF PRAYER AND INTUITIVE DECISION MAKING IN MANAGERIAL SITUATIONS

SUMITA SRIVASTAVA, ANJUL DAYAL, DRISHTI MEHRA

The original motivation for the development of quantum mechanics was to offer an explanation of the findings that seemed to be paradoxical from a classical point of view. Similarly, paradoxical findings in psychology have also made researchers to make use of the quantum formalism in cognitive situations. For example studies by Aerts & Aerts (1994), Atmanspacher et al. (2002), Khrennikov (2004), and Busemeyer et al. (2006b), and more recently, Pothos and Busemeyer (2009) have offered a challenge to the fundamental law of classical (Bayesian) theory approach to cognition and propose a more generalised quantum probability approach. The study of Pothos and Busemeyer (2009) establishes a striking empirical finding and a rigorous mathematical argument that portrays that humans do not always make the most rational decisions. On similar lines, Vasconcelos (2009) offers that decision making process can be optimized by integrating several religious tenets. He argues that intuitive skill may be substantially enhanced and maximized through the use of praying. The present paper is an outcome of a qualitative research carried out to empirically test the role of intuition and prayer in managerial decision making. This paper gives accounts of career journey of 24 working professionals. The data interpretation technique used in this work is template analysis. The findings prove that when individuals experience a superposition of all the preference orders, they use prayer as transcendent coping mechanism that refines their intuition flux and supports their decision making process.

■ 252. SOWING THE SEEDS OF CONSCIOUSNESS

SANGITA SAINI, NIRAT S, RATAN SAINI

Every individual starts his life from home. As a child, home is a place where the foundation of consciousness is sown. A value based, organized, well-nourished and spiritual environment would nurture a conscious human being. It can not be denied that home is the place where the seeds of consciousness germinate and if cultivated properly will lead to a well-developed, highly conscious individual having a high spiritual quotient. This paper brings out various studies in the area of home science which depict the impact home has on consciousness development of human beings. The paper elaborates the role home environment plays in cultivating the soul and nurturing the consciousness of an individual. Since individual is the unit of society, this cultivation plays a very important role in shaping the society and universe at large.

■ 253. FROM THE ORGANIC (FLOWING, GLOWING. GROWING)

MIRROR, THE “WHITE” CROW, ORGANIC CLOCKS AND LOCKS AND OTHER STORIES TO GODEL, TURING, CANTOR AND SIEPERENSKI, THE ETERNAL GOLDEN “QUATRAIN”

SUNDARAM RAMCHANDRAN

This somewhat whimsically titled presentation is an explorative journey from the dynamics of perception and concept formation (The emergence / precipitation of the former from sensations and perceptions respectively) through the somewhat more abstract areas of conceptual lattices and networks to the areas of meta mathematics, the notions of proof leading to the holy grails of Godel's Incompleteness theorem, consciousness, etc. Through poems, sketches etc., we seek to explore the process of discovery / invention / visualization etc., both at an individual level and at a collective level (the latter possibly corresponding to paradigm shift etc. and link them to the former in the sense of paradoxes, optical illusions, multi-dimensional visualization etc including how higher level conceptual networks can make sense of imprecise information, drawings etc (the attractor concept) possibly leading to the Aha !! moment.

■ 257. CONSCIOUSNESS

JATINDRA NATH MOHANTY

Consciousness is all pervading. It is multi-dimensional, physical, mental, emotional and spiritual, matter and spirit manifest, un-manifest, absolute and relative, quiescent and active, personal-impersonal higher than either and both of them. Several attempts have been made to clearly define consciousness, but all these have remained inconclusive. Consciousness can best be described but not defined. The nearest understanding expression of consciousness as has been stated by Sree Sree Thakur Anukulchandra regarded as the Purussottam, the person supreme divine, the true and religious Godhead, is “Sat-Chit-Anand”.

■ 288. CONVERGENCE OF WORLD RELIGIONS?

SARAN BHATNAGAR, JYOTI SATSANGI, NAMAN SWAROOP, SUGANDHA MITTAL

Certain beliefs are generally held amongst followers of any particular affiliation. This exploratory paper ascertains the existence of an underlying structure of beliefs held by a sample of 410 adults having different affiliations / beliefs, on the basis of a designed questionnaire of twenty beliefs. Statistical analysis of responses to the questionnaire suggests that there is a significant alignment along three factors, namely ‘God as the Creator and Guide’, ‘Salvation as a goal’, and ‘Belief in Spirit’.

■ 292. MUSIC, NEUROPLASTICITY AND MICROTUBULES

RAAG SALUJA

A link between music, neuroplasticity and higher cognitive functions is well known. Emerging data strongly implicates microtubules as directors of neuroplasticity. Music perception indicates the quantization of sound energy; and that only certain quantum states are capable of eliciting plasticity. Microtubules have been shown to be capable of quantum computation. The paper discusses the role played by microtubules in the perception of music, and how they mediate the neurophysiological events thus caused.

■ 293. BRAIN AND ITS MYSTIC REALM: SCIENCE TOWARDS INTUITIVE CONSCIOUSNESS

NEH SATSANGI, QUEENA SATSANGI

Consciousness has been defined as awareness of awareness. It has relevance for all science, as it is related to philosophical issues and the model of man. Conscious brain is known to be an electrochemical organ. Electrical activity emanating from the brain is displayed in the form of brainwaves. The Beta state is associated with peak concentration, heightened alertness, hand eye coordination and visual acuity. Alpha-centered programs help you tap your creativity and are excellent for problem solving, finding new ideas and practicing creative visualization. Theta meditation increases creativity, enhances learning, reduces stress and awakens intuition and other extrasensory perception skills.

■ 302. INTUITION - CONVERGENCE WITH SPIRITUAL CONSCIOUSNESS FOR BETTER WORLDLINESS

ARTI PRASAD, INDRAJIT DAS

Intuition can be described as a cognitive process in which unconscious pattern matching may become conscious when a conscious perception matches a pattern held in the subconscious. Intuition, like ratiocination, is one integral aspect of decision-making. Gary Klein found that under time pressure, high stakes, and changing parameters, experts used their base of experience to identify similar situations and intuitively choose feasible solutions. We want to put forth that both above and other ways of defining intuition based on empirical methodologies could possibly be limited in their capabilities.

■ 304. QIGONG DANDAO MEDITATION AND VISUAL ATTENTION

MIN-HUI TSAI, WEI-LUN CHOU

Dandao meditation, one kind of Chinese traditional qigong, trains practitioners to focus their attention on specific body parts, including different areas of the brain. The practice has been speculated to cause beneficial effects in these body parts for the meditators. Because meditators frequently focus attention on many attention-related brain areas, such as the parietal lobe, temporal lobe, and prefrontal lobe, we investigated the hypothesis that dandao meditation training may enhance attentional performance. Moreover, we were curious about whether specific aspects of attention will be improved when the meditators focus on specific areas of the brain. Three functionally and neuro-anatomically distinct attentional subsystems were examined in our study: alerting, orienting, and conflict monitoring. We adopted the Attention Network Test (ANT; Fan, McCandliss, Sommer, Raz, & Posner, 2002) to probe each attentional subsystem. In Experiment 1, we compared the overall attentional performance of the expert group with the control group to build up the fundamental modulation effect of meditation. In Experiment 2, before the ANT task, we asked experts to complete a five-minute meditation. Most importantly, these meditators were asked to focus on only the parietal lobe, temporal lobe, or prefrontal lobe during one period of meditation. By comparing the performance of different attentional components under these three conditions, we could determine whether specific aspects of attention improved when meditators focus on specific brain areas. In Experiment 3, a 12-week dandao meditation training course was provided to a control group, and we examined the effects of short-term training in dandao meditation. We found that the participants in the Qigong dandao meditation demonstrated improved orienting and conflict monitoring performance relative to those in the control group. In addition, we found that different kinds of attentional subsystems were affected when the meditators were asked to focus on different brain areas before they performed the ANT task.

■ 309. NON-MANIFOLD TOPOLOGIES ON LORENTZ MANIFOLD

GUNJAN AGRAWAL, SAMPADA SHRIVASTAVA, NISHA GODANI

Einstein propounded Special Theory of Relativity in the mathematical framework of Minkowski space. Later on with the advent of General Theory of Relativity, Lorentz manifold emerged as a mathematical model for spacetime. Hawking et. al introduced the path topology on Lorentz manifold. Since then, several other spacetime topologies have been studied. These topologies have made a mark in the scientific world because of their importance in the study of the causal, differential and conformal structure of spacetime. The Penrose Hameroff Orchestrated Reduction (OR) theory places the study of spacetime geometry at a central place in the study of consciousness. This theory advocates that consciousness depends on quantum computations in microtubules within brain neurons and is related to the fundamentals of spacetime geometry. A celebrated result derived using advanced techniques of Algebraic Topology, states that the Euclidean n -space is topologically different from the Euclidean 2-space. The present work aims at exploring this question for non- Euclidean spacetime topologies.

■ 313. ENHANCING EMOTIONAL BALANCE THROUGH CONSCIOUSNESS IN MANAGEMENT PROFESSIONALS

A.VASDEV RAJU, A.CHARAN KUMARI

Spiritual Consciousness or consciousness plays a vital role in enhancing the emotional balance in human beings and with no exception it influences the different traits of professionals including management. A study on impact of consciousness and its influence on their emotional acts was conducted on a targeted group of employees at a company and found that balancing the emotions through consciousness was quite helpful not only in leading a peaceful life but also in achieving the business results. A survey was conducted in 2009 and found that more than 70% of the officers were not satisfied with their work life balance. We have identified the real cause of the issues and tried to resolve them through the concept of consciousness to enhance the emotional balance and thus lead to a better work life.

■ 348. COMPUTATIONAL MODELS OF CONSCIOUSNESS

PREM SEWAK SUDHISH

The generation or replication of human consciousness has been investigated for more than half a century and several experiments have shown that it is apparently possible for machines to outperform human beings even in non-repetitive tasks – from creative music composition to intellectual challenges such as playing chess. However, even with the current state of the art in machine intelligence, for any machine to exhibit traits of consciousness, the entire paradigm has to be represented through a sound mathematical model. This paper critically examines whether it is possible at all to represent consciousness through mathematical constructs and attempts to answer questions on boundedness, non-linearity and imprecision in these formulations. Several current techniques that are biologically inspired, such as neural networks, evolutionary techniques, fuzzy logic and their combinations are reviewed and it is inferred that while all current techniques take some numeric or linguistic features as inputs with some numeric or linguistic outputs, none of these are sufficient models of human conscious experience and are completely devoid of some critical aspects, such as intuition, attention and qualia. The paper also presents conjectures on how incorporation of these aspects might improve the next generation of computational models of consciousness.

■ 358. BINOCULAR RIVALRY: A PSYCHO-PHYSICAL STUDY AND ANALYSIS IN QUANTUM MECHANICS

SHEENA SHARNA, SATENDRA GUPTA, C.M MARKAN

A fundamental question in the fields of vision, psychology, and neuroscience is how the brain selects one of many competing visual signals for access to consciousness. When our visual system is confronted with ambiguous stimuli, such as when dissimilar images are presented to the left and right eyes, awareness switches spontaneously between the two images, such that one of the images is suppressed from awareness while the other is perceptually dominant [Etienne-Francois Dutour, 18th century]. This phenomenon of binocular rivalry has attracted the interest of psychologists and neuroscientists alike as a method of probing the mechanisms that determine our visual awareness and consciousness. Experiments have been carried out based on Electroencephalogram (EEG) and FMRI etc to find correlates for this spontaneous switching in visual awareness and evidences have been found in favor of role of attention in binocular rivalry [Urte Roeber, 2011]. However such experiments can create perturbations in conscious state of a person and may not provide best results. Therefore, there is a requirement to conduct experiments in a manner such that measurements can be made without any effects of environmental and other factors. Psycho-physical experiments, with their dependency on the subjective experiences of a person rather than electrical activity in brain, if performed in a well controlled manner can provide better results. Simultaneously there is a requirement of a theory that can provide appropriate formulism for these subjective experiences. Von Neumann's theory of measurement [Von-Neumann, 1955] (that requires a psychological process to choose from various alternative possible outcomes of probing action [Henry P. Stapp, 2008]) describes Psycho-physical aspects of subjective experiences of a person as shared with us [Efstratios Manousakis, 2006], mathematically showed that if one keeps making conscious attempts to observe one state frequently, the same state is projected, which is similar to the quantum Zeno effect [Sudarshan, E.C.G., Misra, B. (1977)]. In this paper, we have investigated the issue that attention alters the inherent switching in conscious states as associated with perceptual rivalry through Psycho-physical experiments. The observer was presented two different images to the left and right eye using "vuzix wrap 1200" eyewear. The observers were asked to focus on only one image out of two dissimilar images. From the experiments, we found that through visual attention one could stop the competition between two images and perceive only one image. Depending on the different mental states of observers, we obtained distinct plots for the duration of dominance. Interestingly, in our study we observed that through visual attention, observers were able to attain the same state as described by Quantum Zeno Effect. We have also analyzed the obtained experimental data for different possible states of Binocular rivalry in quantum mechanics.

■ 366. COMPARATIVE STUDY OF MEDITATING VERSUS NON-MEDITATING PREGNANT WOMEN ON DELIVERY

DAYALPYARI GOEL, GURR DEVI SRIVASTAVA

This paper attempts to find out the difference on mode of delivery among women of two groups meditating/non-meditating. We are doing a followup of 50 women just after their pregnancy is confirmed. They are from different socio-economic groups. A few women have completed their term and our study is still continuing.

■ 370. CONSCIOUSNESS AND MEDICAL THERAPIES

PALLAVI SATSANGI SHARMA

Sickness is nothing but manifestation of negative energy in the form of disease on the physical plane which medicine can cure but cannot remove from the root cause which is at a metaphysical level or at the level of Consciousness. CAM (Complementary and Alternative

Medicine) can reach where general medicine cannot. In every culture and in every medical tradition before ours, healing was accomplished by moving energy.

■ 377. SELF-CONSCIOUSNESS AND COSMIC-CONSCIOUSNESS WITH REFERENCE TO DANTE'S DIVINE COMEDY

NAMITA BHATIA, SOAMI DAS BHATIA

The mystic faculty is a common heritage of humanity. Nature in fact endowed human body with potentialities of full spiritual growth. When man exercises those faculties he grows into his fullness attaining to lofty heights of spiritual awareness that brings peace inside and peace outside. The scriptures of extant religions contain a number of descriptions of such elevated states of consciousness. Cosmic consciousness is an ultra high state of illumination in the human mind. The attainment of cosmic illumination will cause an individual to seek solitude from the multitude and isolation from the noisy world of mental pollution. The cosmic consciousness in each human is the true Higher-Self which exists as a constant moving whirlpool.

■ 416. CONSCIOUS CO-CREATION : EVOLUTION OF CONSCIOUSNESS OR CREATING YOUR OWN FUTURE?

SURESH IDNANI, TEENA IDNANI

The human consciousness is constantly evolving. The Mayan Calendar symbolizes the nine levels or steps of evolution the universe goes through on its climb to its highest state of consciousness. With the completion of the ninth wave we are integrating the ability to fully co-create reality. It is not a new ideology or philosophy, but simply an awareness that humankind is 'aware' of its own evolution and therefore responsible for the participation in and contribution to the process of evolution and co-creation. We are literally at the frontier of becoming co-creators with the process of creation. Billions of species before us have become extinct, but as human beings, we are the first to be aware that our actions can affect the evolution on Earth – consciously and deliberately, or risk possible extinction. We are co-creating a reality based directly on our level of consciousness. In fact, the world is a direct reflection of our inner state. In order to fix anything in the outer world, we must first heal it within ourselves. Otherwise, the attempt will be ineffective. When the recognition inside us is denied (our true nature), the energy expressed is fear and reactivity. In this paper we intend to focus on working with facts in a bid to understand whether conscious co-creation is a bid to reveal the characteristics and truth around the process of evolution or is it a means to an end of a conscious being creating one's own reality and future.

A large, stylized, light orange floral and vine pattern is centered on the page, extending from the middle to the bottom. It features swirling vines and leaves.

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