

# NIAS NEWS



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April 2004



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APRIL 2004





## *Editors' Note*

This particular issue of NIAS NEWS marks the first to be published under the guidance of Dr K Kasturirangan, who has recently taken over as Director of the National Institute of Advanced Studies from Dr Roddam Narasimha. As we move deeper into the eleventh year of publication of this newsletter, however, we look forward to continuing our earnest attempts to provide you glimpses of the activities being carried out at the Institute. We do hope that you enjoy reading it as much as we enjoy producing the newsletter. We would definitely like to make this attempt more interactive and, therefore, invite you to please write in to let us know if you have any suggestions and comments regarding its contents or format.

**Anindya Sinha, Hamsa Kalyani and A Deva Raju,**  
Editors, April 2004



## *From the Director's Desk*



Let me at the outset greet the NIAS community through the vehicle of NIAS News, on the eve of its first publication, after my formal admission into this Institute as one of your colleagues. I come from an Institution known for its culture of openness, courage to absorb new knowledge and think differently, and exercising the fundamental freedom to doubt, a hallmark of scientific ethos. In the first month of my association with NIAS, I am delighted to experience a very similar culture here, even though both in terms of goals and objectives as well as the scale of operations, the two institutions are distinctly different. The pioneering role of Dr.Raja Ramanna in creating an innovative framework for the conduct of the activities of this Institute in inter-disciplinary research with no previous example and heritage to fall back on and the saga of Prof.Narasimha, that witnessed the Institute scaling extraordinary heights of excellence and erudition, have placed on all of us, in particular the NIAS faculty, a very challenging responsibility as we progress from here.

Prof. Narasimha's scholarship, manifested through his mastery and in-depth knowledge of a wide spectrum of subjects, from Sanskrit and works of *Yōga-vasiṣṭa*, through history, philosophy to aerospace industry and rarified gas dynamics, is truly remarkable. It is difficult to imagine that an individual could acquire so much knowledge in such a short span of one's lifetime. The resultant extraordinary creativity of his mind has profoundly influenced the course of evolution of this Institute in the recent years. What is equally striking is the fact that so much has been achieved by this Institute in an environment of limited human resources, infrastructure and finance under his leadership. I have had the privilege of knowing Prof.Narasimha professionally for two decades. It is interesting to recall, how, his deep intellectual insights were brought to bear for

examining some of the most complex technical problems that ISRO faced during the early phase of its launch vehicle development programme. At a personal level, Prof.Narasimha is an embodiment of the virtues one look for in an ideal human being, intensely warm, extraordinarily humane and equally importantly most liberal minded when it comes to dealing with individuals and situations. Even as I pay my own tribute to such a rare personality, I am acutely aware of the extraordinary challenges that his legacy can place on my new role and responsibility.

The courage and confidence that I have gathered since entering the portals of this Institution, primarily stems from the interaction I had with some of the key members of the NIAS's academic community over the last one month. I am deeply impressed by each one of them; their outlook while working in NIAS their enthusiasm, quest for excellence, originality in approach, highest level of dedication and above all candid appraisal of the issues they would like me to look into. In that sense, my first task of understanding this Institute in all its dimensions and identification of which elements should receive my immediate attention have been by and large accomplished. There is of course another important aspect to be followed-up, that of acting on the Keniston Report. Finally, we have the vision of the founder of NIAS, late Shri J.R.D.Tata. In progressing from where we are today, we need to constantly remind ourselves of the rich legacy of his thoughts.

On the eve of embarking on this new intellectual odyssey, full of exciting possibilities, I seek the understanding and support of my illustrious predecessors, guidance of the Governing Board and its distinguished Chairman, Prof. M. S. Swaminathan, intellectual inputs of the Academic Council, appreciation and encouragement of NIAS Associates and above all the highest level of commitment and dedication from my colleagues at NIAS and in particular the Faculty. Let us start building the NIAS of tomorrow - on its present foundations characterized by rich heritage and laudable traditions.

**K Kasturirangan**

## **MEETING OF THE COUNCIL OF MANAGEMENT OF NIAS**



The twenty-sixth meeting of the Council of Management of NIAS was held on January 29 at the Institute.

The meeting was attended by Prof M S Swaminathan (Chairman), Prof Roddam Narasimha (then Director, NIAS), Mr B K Das, Mr Xerxes Desai, Dr Devaki Jain, and Maj Gen M K Paul (Retd) (Secretary).

## **MEETING OF THE ACADEMIC COUNCIL OF NIAS**

A meeting of the Academic Council of NIAS was held on March 15. It was attended by Prof Roddam Narasimha (Chairman), Mr T R Satish Chandran, Prof O Siddiqi, Prof N Balakrishnan, Prof B V Sreekantan, Prof S Rajagopal, Prof Prabhakar Vaidya, Prof S Settar and Maj Gen M K Paul (Retd) (Secretary). The members of the faculty who were specially invited to attend this meeting included Dr A R Vasavi, Dr N Shantha Mohan, Dr H K Anasuya Devi, Dr P K Shetty, Dr Anindya Sinha and Dr Sangeetha Menon.



## *Research Programmes*

The principal areas of research that faculty members of the Institute are currently involved in include consciousness studies; conservation biology; energy policy and renewable energy; environmental toxicology; epigraphy; fluid dynamics and atmospheric sciences; gender studies; history and philosophy of science; Indian history; international and strategic studies; mathematical modelling in non-traditional areas; primate behavioural ecology, communication and cognition; science and technology policy; sociology and social anthropology; and theory of numbers.

More specifically, S Balachandra Rao has received a research grant from the Indian National Science Academy, New Delhi for his project on **Eclipses and planetary conjunctions in medieval Indian astronomical texts – A critical study.**

The **Culture, Cognition and Consciousness Unit** has received grants for two projects being conducted in the areas of behavioural ecology and conservation biology.

Robin V Vijayan and Anindya Sinha have received a two-year grant from the Ministry of Environment and Forests, Government of India for their project entitled **Evaluation of the foraging requirements of a threatened endemic passerine, the White-bellied Shortwing, in natural and disturbed habitats for conservation planning in the Western Ghats.**

Anindya Sinha has also received financial support from the Wildlife Conservation Society India Program, Bangalore, for his exploratory project entitled **In search of the Tawang macaque: A preliminary survey of the status, demography and behavioural ecology of a potentially new macaque species in western Arunachal Pradesh, northeastern India.**



## NIAS PUBLICATIONS

### I. SPECIAL PUBLICATIONS

SP1-04 The fate of reforms

The Fourth M N Srinivas Memorial  
Lecture

*Arun Shourie*

SP2-04 Science and beyond: Cosmology,  
consciousness and technology in the  
Indic traditions

*Sangeetha Menon, B V Sreekantan,  
Anindya Sinha, Philip Clayton and R  
Narasimha*

### BOOKS AND MONOGRAPHS

**Balachandra Rao, S.** 2003. Corrections for  
Planets' Positions and Samanta Chandra Sekhar  
in Ancient Indian Astronomy and Contributions  
of Samanta Chandra Sekhar. Narosa Publishing  
House, New Delhi

### PAPERS

**Kumar, A** 2003. Missile defense and strategic  
modernization in Southern Asia **In:** Nuclear risk  
reduction in South Asia (eds. Michael Krepon  
and Chris Gagne). A Henry L Stimson Centre  
Book, Vision Books, New Delhi, pp 265-280.

**Kumar, A** and Vannoni, M. 2004. Ballistic  
missile proliferation in southern Asia: Options  
for stabilisation. Cooperative Monitoring Center  
Occasional Paper 34, Sandia National  
Laboratories, SAND 2004 - 0317, February 2004,  
USA

**Radhakrishna, S** and Singh, M. 2004. Reproductive biology of the slender loris (*Loris lydekkerianus lydekkerianus*). *Folia Primatologica* 75: 1-13

**Sarangapani, P.** 2003. Indigenising curriculum: Questions posed by Baiga Vidya. *Comparative Education* 39 (Special Issue on Indigenous Education): 199-209

**Sarangapani, P.** 2003. Childhood and schooling in an Indian village. *Childhood A Global Journal of Child Research* 10(4): 403-418

**Sarangapani, P.** 2004. Childhood and schooling in an Indian village. **In:** Playing for Real: Hindu Role Models, Religion and Gender (eds J S Hirst and L Thomas), Oxford University Press, New Delhi.

#### REVIEWS

**Upadhya, C.** 2004. Book review of *Gendering Caste: Through a Feminist Lens* by Uma Chakravarti, (Kolkata: Stree, 2003) *Biblio.* 9(1&2): 29

#### REPORTS

**Sinha, A**, Datta, A, Madhusudan, M D and Mishra, C. 2004. A report on the Tawang macaque *Macaca* sp. In: *The high altitude wildlife of Western Arunachal Pradesh: a survey report* (eds. Mishra, C, Datta, A and Madhusudan, M D). CERC Technical Report No. 8. Nature Conservation Foundation, International Snow Leopard Trust, and Wildlife Conservation Society (India Program), Mysore, India, pp. 35-39

Subramanian, R, Sayed Y, Soudien, C, **Balagopalan, S** and Carrim, N. Education exclusion and inclusion: Policy and implementation in India and South Africa. Synthesis Report. Submitted to DFID, March 1, 2004.



## **DOCTORAL PROGRAMME IN NIAS**



NIAS is a unique institution that conducts advanced research in multidisciplinary areas that bridge the gap between the natural sciences, technology and the social sciences. Complementing its research programmes, NIAS also offers courses in different areas of research, development and policy for different groups of professionals including teachers, bureaucrats, and executives.

One constraint that NIAS has functioned under so far has been the lack of a doctoral programme whereby young students are trained in the research areas that the Institute has traditionally been interested in. There is, however, an urgent need for such a programme for two principal reasons. First, the unique multidisciplinary academic culture that NIAS has so carefully been building up over the past years has to be nurtured and not allowed to dissipate with the passage of time. This would require that young, talented, and committed students are identified and absorbed into the organisation they would then serve as torchbearers into the future. Second, much of the research being conducted in the Institute, being of an interdisciplinary nature, requires cooperation between a number of specialists. Groups such as these would definitely benefit from young researchers of different disciplines who can actively academically contribute in their respective areas of expertise.

It must also be noted that there has been, in recent times, increasing awareness and interest in issues relating to the interfaces between the natural sciences, technology and the social sciences among young Indian graduate students. Many of them, in fact, are becoming increasingly attracted to pursuing a research career in these interdisciplinary areas. Very few opportunities, however, exist for such students, who have dared to think differently, to pursue a career of their choice within the country. NIAS has thus begun a doctoral programme in

collaboration with the Manipal Academy of Higher Education (MAHE), Manipal, an innovative leader among institutions imparting higher education in the basic and applied sciences in the country. This programme specifically involves the awarding of doctoral degrees by MAHE to students interested to pursue independent research in the areas that NIAS specialises in. For more information, please contact Anindya Sinha ([asinha@nias.iisc.ernet.in](mailto:asinha@nias.iisc.ernet.in)).

M D Madhusudan, the first doctoral student under the NIAS-MAHE Doctoral Programme, submitted a dissertation entitled "Uneasy neighbours: Human resource-use and large mammal conservation in the tropical forests of Karnataka, India" in fulfilment for a doctoral degree in September 2003. The degree was finally awarded to Madhusudan in March 2004.

**Anindya Sinha**



## *Honours and Awards for NIAS Faculty*



### **S Balachandra Rao**

Appointed Honorary Director of the Gandhi Centre of Science and Human Values, Bharatiya Vidya Bhavan, Bangalore, from January 14

Nominated as a Member of the Research Advisory Committee for History of Science of the Indian National Science Academy (INSA), New Delhi, for 2004

### **DISSERTATIONS GUIDED BY THE NIAS FACULTY**

#### **H K Anasuya Devi**

A project entitled "Data Mining for Ancient Scripts" by Mr. Santosh Varghese, for the degree of MCA, from Rathnavel Subramaniam College Of Arts & Science, Coimbatore was completed during December 2003 - March 2004.

### **COURSES TAUGHT BY THE NIAS FACULTY**

#### **H K Anasuya Devi**

Teaching a course entitled "*Artificial Intelligence Systems*" at Proficiency Continuing Education Programme, Indian Institute of Science, Bangalore, January to May 2004.

### **WORKSHOPS CONDUCTED BY THE NIAS FACULTY**

#### **S Balachandra Rao**

Conducted a two-day workshop on Classical Indian Astronomy, jointly with S K Uma and Padmaja Venugopal at the MES College, Bangalore, in January 2004



## *Important Events*

*Complementing its research programmes, NIAS organises a variety of seminars, workshops, and academic courses each year. Some of the important events that were organised during the period from January to March 2004 included:*

### **INDO-US WORKSHOP ON SCIENCE AND TECHNOLOGY TO COUNTER TERRORISM**

**January 12-14**

This workshop was organised in Goa by NIAS in collaboration with the Committee on International Security and Arms Control, USA. A spectrum of subjects were addressed by Indian and US experts during this meeting; these included survey of terrorist threats and relevant science and technology tools, cyber-terrorism, threats to nuclear power facilities, threats to urban and rural infrastructure, and agriculture and bio-terrorism. The proceedings of the workshop will be published in the near future.

**S Rajagopal**

### **18TH NIAS COURSE FOR SENIOR EXECUTIVES: AN INTEGRATED APPROACH TO KNOWLEDGE AND INFORMATION**

**January 19-30**

The theme of this course was **Leveraging India's Advantages**. There were twenty participants from organisations such as Vikram Sarabhai Space Centre, Ministry of External Affairs, National Institute of Science Technology and Development Studies, Indian Space Research Organisation, Army Headquarters, Navy, Tata Steel, Indian Air Force, Indira Gandhi Centre for Atomic Research, Postal Services, Air Force Technical College, Defence Research Development Organisation (DRDO), Department of Science & Technology

(DST), Central Food Technological Research Institute (CFTRI), Syndicate Bank, College of Defence Management, Centre for Air Borne Systems and Indian Institute of Astrophysics.



The list of speakers and topics is as given below.

- Infrastructure - Emerging Opportunities A Ramakrishna
- Indian Banking Sector R V Shastri
- India's Economic Advantages Narendar Pani
- India's Biodiversity Heritage Vanaja Ramprasad
- Opportunities and Challenges for Indian Universities M I Savadatti
- WTO: Opportunities and Threats To Indian Economy M R Narayana
- Technology in the Public Sector R Narasimha
- Multinational R&D in India Guillermo Wille
- Leveraging India's Advantages: Science in India P Balaram
- Health For All in India - Is It Possible? Ravi Narayan
- Leveraging India's Advantages: Forest Resources of India S N Rai
- Indian Bureaucracy Sobha Nambisan
- Political Economy Rajeev Gowda
- The Revolution of Low-Fare Air Travel G R Gopinath
- Accountability in Governance Samuel Paul
- In Defence of Judicial Activism Udai Raj Rai
- Panel Discussion Leveraging India's Armed Forces M K Paul  
Ravi Eipe  
S Karmaker  
Samir Chakravorty
- Gender Shantha Mohan
- The Role of NGOs Shobha Raghuram
- Science and Ethics of Human Cloning Anindya Sinha
- Medicine Devi Shetty
- Leveraging IT and Innovation for Economic Growth Vinay Deshpande
- Leveraging Tourism: The Kerala Experience T Balakrishnan
- **MNS Memorial Lecture - The Fate of Reforms** Arun Shourie
- Indian Religious Cultures S Settar
- Lecture-Demonstration on Veena Suma Sudhindra
- Imperative of Self Reliance in Indian Armed Forces Sangram Singh Byce
- Indian Nuclear Power Programme S Rajagopal
- Ethics in Indian Thought S K Ramachandra Rao

## **WORKSHOP ON FOUNDATIONS OF SCIENCES**

**February 23-25**

This three-day workshop, held in NIAS, was co-sponsored by the Project of History of Indian Science, Philosophy and Culture (PHISPC) of the Centre for Studies in Civilizations, New Delhi and Kolkata.

Twenty two speakers presented their papers in six sessions: (i) Historical Foundations of Science, (ii) Epistemological Foundations of Sciences, (iii) Subjective Foundations of Sciences, (iv) Ontological Foundations of sciences Life Sciences, (v) Ontological Foundations of Sciences Physical Sciences, and (vi) Technology and Cultural Foundations of Sciences.

**B V Sreekantan**

## **SEMINAR-CUM-STUDY ON EMERGING SECURITY ENVIRONMENT, ESCALATION DYNAMICS AND RISK MANAGEMENT IN SOUTHERN ASIA**

**March 3-5**

The International and Strategic Studies Unit of NIAS organised this seminar-cum-study at NIAS in collaboration with the Directorate of Net Assessment, Integrated Defence Staff, Ministry of Defence, Government of India. The participants were drawn from the members of the Defence Services (Indian army, navy and air force), members of the academic and strategic communities, scientists and engineers. The objective of this meeting was to discuss a number of themes related to the current security environment and how such themes related to the escalation spiral becomes important. The other important theme covered concerned risk management in southern Asia. How southern Asia would manage risks emanating from terrorism and WMD also formed a major part of the debate. There were 19 papers presented during the three

days of the seminar-cum-study. Vice Admiral Raman Puri, Chief of Integrated Defence Staff delivered the keynote address, while Dr Roddam Narasimha, then Director of NIAS, delivered the valedictory address.



A report based on the discussions held during this meeting will be published by NIAS shortly. An edited volume will also be published, based on the papers submitted by the resource persons who attended the seminar.

**Arvind Kumar**

**PUBLIC RELEASE OF THE BOOK, "SCIENCE AND BEYOND: COSMOLOGY, CONSCIOUSNESS AND TECHNOLOGY IN THE INDIC TRADITIONS"**

**March 30**

The proceedings of the International Seminar on Science and Beyond: Cosmology, Consciousness and Technology in the Indic Traditions, held at NIAS during January 8-11, 2003, has been published as a book with the same title and edited by S Menon, B V Sreekantan, A Sinha, P Clayton and R Narasimha, under the aegis of NIAS Special Publications. This volume was released to the public by the Chairman of the Management Council of the Institute, Dr M S Swaminathan at an Associates' Meeting attended by the faculty and associates of NIAS, as well as members of the public.

**B V Sreekantan**



## *Associates' Programme*

*The Institute maintains a strong outreach with its Associates Programme, organised by **P K Shetty**. The Associates of the Institute include prominent personalities from widely different backgrounds in the media, arts, policy-making and academia. Associates are invited to a monthly evening lecture series and other important events, and constitute a strong base of ongoing outside support and interactions for the Institute.*

The Associates' Programmes during the period from January to March 2004 included the following event:

March 30

Carnatic vocal music

*Vidwan S Shankar*

accompanied by

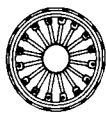
Vidwan S Sheshagiri Rao, violin

Vidwan N Vasudeva, mridangam

Vidwan Ranganatha Chakravarthi, ghatam

Vidushi Swarna Shankar, tambura





## Wednesday Discussion Meetings



*The members of the Institute meet every Wednesday morning (and rarely on other mornings too!) for informal academic discussions after a talk delivered by a member of the faculty. These Wednesday meetings, organised by **Sangeetha Menon**, also serve as a forum for invited guest speakers to deliver a lecture on a subject of their choice. The discussions then continue over the high tea that follow these talks!*

The Wednesday Discussion Meetings during the period from January to March 2004 have included:

January 7

*Grahalaaghavam and Karanakuthuhalam:  
Two Indian astronomical handbooks*

*S Balachandra Rao*

February 4

*What works and why? An overview of 20  
experiments to improve school quality*

*Padma M Sarangapani*

*For the last two years, along with Sutradhar, a Bangalore-based NGO, Dr Sarangapani has been gathering and reviewing case studies of efforts in different parts of the country to improve the quality of government schools. In this presentation, she presented an overview of these cases, and a preliminary analysis of what works and why.*

February 11

*Inference*

*Sundar Sarukkai*

March 3

Changing agricultural practices in India  
Insights from a case study

*P K Shetty*

*Indian agriculture has undergone considerable transformation during the past four decades. The adoption of modern technological practices such as improved irrigation, high-yielding varieties, agro-chemicals and farm mechanisation have made notable contribution towards raising the food production. However, there are several constraints for further increase in production due to increasing number of small farms, agro-chemical pollution, soil erosion and desertification. In addition, the intensive cultivation of the high-yielding varieties, monoculture of commercially important crops, overlapping of cropping seasons and repeated and over application of plant protection chemicals, has resulted in high incidences of pests and diseases in agro-ecosystems. The increasing losses due to crop pests are the major limiting factor for sustaining agricultural production. This talk revealed many interesting facts obtained from a field study on the problems of input-driven agriculture, resurgence of pests and diseases, unsustainable agricultural practices, and the socio-economic and health externalities in a few agro-ecological regions in the country.*

March 17

Of memes and macaques: Behavioural  
inheritance in primate social systems

*Anindya Sinha*

*Mechanisms of social learning allow higher animals to acquire information from the behaviour of others, and through their own modified behaviour such information can be transmitted between individuals and across generations. Variation in such socially acquired and transmitted behaviours is unlikely to be under direct genetic control since individuals*

*who are closely related genetically can have and pass on very different behaviours; this is also true for cultural traditions that such behaviours may have generated. Behavioural information transfer of this nature thus represents another form of inheritance that operates in mammals and birds in tandem with the more basic genetic system.*



*This talk examined the roles that behavioural inheritance and socially transmitted cultural traditions play in the structure and dynamics of primate societies, with particular reference to bonnet macaques, a primate species endemic to peninsular India. Three principal consequences were considered: the role of phenotypic flexibility in social evolution, the origin of individual behavioural traits and social traditions, and the possibility of cultural selection acting on stable traditions.*

March 24

Chronicles of lives foretold: Social traditions and cultural selection in wild bonnet macaques

*Anindya Sinha*

*This was the second part of Dr Sinha's talk on behavioural inheritance among bonnet macaques, the first part of which was delivered on March 17. During this talk, he also showed two short video clips on some unusual behaviours observed among the bonnet macaques in the Bandipur National Park recently.*

March 31

The politics of accommodation India and the international system

*Snidhar K Chari*

*A major foreign policy and security issue confronting an emerging power like India is how the existing power structure of the international system will respond to the*

*country's increased economic and military strength. This response will have elements of "accommodation", "containment" or even "confrontation" and the talk explored various factors in this dynamic, using elements of the foreign policy of the most powerful state in the system, the United States, as one possible focus point.*

## **SPECIAL PROGRAMMES**

There were one special lecture and six public lectures organised at the Institute during the period from January to March 2004.

### ***Special lecture***

March 24

Some important discoveries during the past twenty years in the theory of numbers

*K Ramachandra*  
NIAS

### ***Public lectures***

January 23

Spontaneous creative non-thought An investigation into the mind of scientific observers

*Matthias Braeunig*  
Freiburg, Germany

*Starting with a simple experiment, this lecture attempted to clarify what kind of science is needed to study the mind. It was argued that an investigation of consciousness is necessarily subjective and partial, unless it engages what, in the Tibetan Buddhist traditions, is called the Clear Light Mind (CLM). Although it is extremely subtle, the CLM is the actual potential present in every moment of experience. Because it is self-referential by nature, it eludes scientific grasp, remaining inaccessible forever. The speaker asked two questions: Can the mind be observed "without" separation, that is, without creating a new instance of it? And secondly, can this still validly be called science?*

January 23

The revolution of low-fare air travel

*G R Gopinath*  
Deccan Airways  
Bangalore



January 28

The fate of reforms

*Arun Shourie*  
Honourable Minister of Disinvestment,  
Communications and Information  
Technology, Government of India

January 29

Imperative of self-reliance in the Indian  
armed forces

*Vice-Admiral Sangram Singh Byce*  
Integrated Defence Staff  
Indian Navy

February 2

Empire after globalisation

*Partha Chatterjee*  
Director  
Centre for Social Sciences, Kolkata and  
Department of Anthropology  
Columbia University  
New York, USA

*This talk primarily addressed two questions:  
(1) Is the present US imperialist dominance  
a necessary consequence of the process of  
globalisation? (2) Is the present US  
imperialism consistent with democracy at  
home and abroad?*

March 8

Dragon and elephant: Challenges and  
opportunities ahead

*Wang De Hua*  
Director  
Institute for South Asia and Central Asia  
Studies  
Shanghai, China

*The speaker focussed his attention on a comparative study of the Dragon and the Elephant China and India, respectively as rising powers in today's world. According to him, the character of the 21<sup>st</sup> century world will, in many ways, depend on the success of cooperation for peace, prosperity, stability and freedom in India and China. That presents the two countries with an opportunity but also a profound responsibility to work together. Here, he felt, Bangalore and Shanghai can make their own contributions.*

### **SEMINAR ON THE HISTORY OF IDEAS**

NIAS and Raman Research Institute (RRI), Bangalore, are organising a monthly Seminar on the History of Ideas, meeting usually on the second Friday of every month in NIAS. The organising committee consists of R L Kapur, N Kumar, R Narasimha and M G Narasimhan (Convener). There was one talk in this series held during the period from January to March 2004:

February 13

Jagadish Chandra Bose: The man of all times

Sanjoy K Biswas

Indian Institute of Science

Bangalore

*Jagadish Chandra Bose was a product of a turbulent nineteenth century Bengal. He was a hard-working physicist who contributed greatly to the field of communication and the then-nascent domain of plant physiology. He was an institution builder and became an icon for generations of scientists. He was also a product of the cultural and political currents of that period where he joined the reformist ideological stream. It is important for us to understand the dialectics of that stream to be able to pin down the paradigm, Bose and his contemporaries established for Indian scientific endeavour. The point of reference and its relationship to Indian cultural reality are issues which set the framework in which our scientific and technological enterprises operate, perhaps even today.*

## NIAS LITERARY FORUM



This forum has been established in the Institute to pursue and conduct literary activities such as play-reading, reading of poetry (one's own or others'), reading of short stories and the like. These activities are aimed at providing complementary support to the Institute's more regular work. The activities are open to all members of the NIAS fraternity and occasional guests from outside the Institute as well. Currently, this forum meets on one Wednesday every month. For more details about its activities, please contact **M G Narasimhan** ([narasim@nias.iisc.ernet.in](mailto:narasim@nias.iisc.ernet.in)).

## CONSCIOUSNESS DISCUSSION FORUM

The Culture, Cognition and Consciousness Unit, in an effort to increase its activities in consciousness studies and to draw upon other existing sources of knowledge and interest in this area, has initiated a Consciousness Discussion Forum. The Forum has decided to meet once in about two months. Following the exchange of ideas in the first few meetings, an e-group on Consciousness has been formed. Those who are interested in this discussion forum can either log on to [www.egroups.com/groups/NIAS-forum-on-CONSCIOUSNESS/](http://www.egroups.com/groups/NIAS-forum-on-CONSCIOUSNESS/) and register themselves or subscribe to the group by sending an email to [NIAS-forum-on-CONSCIOUSNESS-subscribe@egroups.com](mailto:NIAS-forum-on-CONSCIOUSNESS-subscribe@egroups.com). For more details, please contact **Sangeetha Menon** ([smenon@nias.iisc.ernet.in](mailto:smenon@nias.iisc.ernet.in)).

Three discussion meetings were organised by the Forum during the period from January to March 2004.

January 12

Biocultural evolution in the 21<sup>st</sup> century

*William Grassie*

Metanexus Institute of Religion and Science  
New York, USA

With comments by

V V Raman  
Rochester Institute of Technology  
New York, USA

*We live at an extraordinary moment in the natural history of our planet and the cultural evolution of our species. The human population has soared in the last century to over six billion. Every bioregional ecosystem in the world has been significantly altered by humans. We are about to embark upon large-scale genetic engineering of other species and ourselves. Humans thus appear to be a Lamarckian wild card in the epic of evolution. Increasingly, it is not the material basis that determines civilisation, but our culturally transmitted belief systems, for better or worse, that will ultimately direct the future evolution of both the planet and ourselves.*

February 26

Understanding the qualitative nature of mental representations

Rajesh Kasturirangan  
Department of Brain and Cognitive Science  
Massachusetts Institute of Technology  
Cambridge, USA

*Cognitive science and consciousness studies are rife with dualities. A few classical examples of these dualities are mind-body duality, language-world duality, subject-object duality. An example of a more recent duality is that between the hard and soft problems of consciousness.*

*In this talk, the speaker gave a brief presentation of the methodological problems underlying these dualisms and showed how we can understand the relationship between qualitatively different entities, such as mind and body, in a nondual framework, which can be formalised explicitly using the mathematical language of category theory. He applied these*



*mathematical techniques to the problem of relating language to the world and argued that there is an underlying unity (nonduality?) despite the appearance of duality.*



March 18

Studying agentive behaviour

*R Narasimhan*

Bangalore

*This subject was discussed under the following headings:*

*Definition of Agentive Behaviour (AB)*

*Methodology of studying AB*

*Types of explanations that arise in studying AB*

*Constraints that modelling AB must satisfy*

*Strategies for studying AB with some suggestions*

*Critical open problems*

*The ideas discussed in this talk have been dealt with in depth in the recently published book "Artificial Intelligence and the Study of Agentive Behaviour", Tata McGraw-Hill, Bangalore*



## *Meetings Attended and Lectures Delivered by NIAS Faculty*

**JANUARY TO MARCH 2004**

### **Dilip Ahuja**

Attended the International Congress on Renewable Energy for Sustainable Development, Bangalore, January 21-23

Attended the Fourth Annual Meeting of the Board of the Inter-Academy Council, at the Royal Netherlands Academy of Arts and Sciences, Amsterdam, January 26-28

### **B K Anitha**

Organised and facilitated a Workshop to train members of the Bagalkot local level committee to check and prevent the dedication of girls through Devadasi system at ISI, Benson Town, Bangalore. January 17 - 18

Delivered a talk on Gender issues in the Agricultural sectors For the middle and senior level District level Agricultural officers of Kerala State as a part of Gender sensitization programme organized by the Small farmers Agri-buisness Consortium at the Agricultural university, Trichur District, February10

Delivered a lecture on definition of trafficking, its various forms, mapping and its nexus with various agencies. A critical review of the existing forms of rescue and rehabilitation measures by various agencies also formed a part of the presentation. This lecture was a part of facilitating the regional workshop, Belgaum Division to prepare an action plan to combat trafficking of women and children at Belgaum. The Department of Women and Child Development, Government of Karnataka and UNICEF organized the workshop. February 27-28

Participated in the CapNet India Launch meeting held at NIAS, organised by SaciWaters. March 27-29



Participated in the close door meeting to discuss the UNU/INWEH proposal of setting up a Regional Training Center as part of their Water Virtual Learning Center (WVLC) in South Asia. March 30

### **S Balachandra Rao**

Delivered six lectures on “Classical Indian astronomy” at the UGC-sponsored Refresher Course for University and College Teachers, organised by the Centre of Advanced Study in Sanskrit, University of Pune, Pune, January 30-February 2

Participated in meetings of the editorial board of the Indian Journal of History of Science, Research Advisory Committee for History of Science, and the National Commission for History of Science, New Delhi, March 27

### **Malavika Kapur**

Invited to be chief guest at the 43<sup>rd</sup> School Day Celebration of the B P Indian Public School and B P Indian High School, Bangalore, January 16

Delivered an invited lecture on “Child care in ancient India from a development perspective” at the Annual Conference of the Indian Association of Clinical Psychologists, Thrissoor, January 30

Served as a resource person for preparing the final document on the Post-graduate Diploma Course in Counselling, Sri Ramachandra Medical College and Research Institute (Deemed University), Chennai, February 14

### **Arvind Kumar**

Presented a paper entitled “Weapons of mass destruction in the international system” at the

National Seminar on International System in the 21<sup>st</sup> Century, organised by Stella Maris College, Chennai, January 8-9

Delivered two guest lectures on "Theories of deterrence and south Asia" and "Nuclear weapons in the 21<sup>st</sup> century" at the School of International Studies, Pondicherry Central University, Pondicherry, February 17

Delivered an invited talk on "The relevance of deterrence and dissuasion in escalation dynamics" at the Seminar-cum-Study on Emerging Security Environment, Escalation Dynamics and Risk Management in Southern Asia, organised by the Directorate of Net Assessment, Integrated Defence Staff in collaboration with NIAS, Bangalore, March 3-5

Delivered a talk on "China-Pakistan civilian nuclear cooperation" at the National Symposium on China-Pakistan Strategic Cooperation: Indian perspectives, organised by Center De Sciences Humaines, New Delhi, March 19-20

Delivered a talk on "Implications of internal dynamics of Pakistan for India's Security and Foreign Policy" in the National Seminar on Domestic Environment in South Asia: Implications for India's Security and Foreign Policy, organised by the School of International Studies, Pondicherry Central University in collaboration with Ministry of External Affairs, Government of India and Pondicherry Government, Pondicherry, March 22-24

### **Sangeetha Menon**

Attended the National Conference on Indian Philosophy, Science and Culture, Hamdard University, New Delhi, January 23-25

### **N Shantha Mohan**

Participated in the Consultation on the South Asian National resource Centres organized by IWRAW Asia Pacific at Kathmandu, February 13-17

Delivered a Lecture on Social Construction of Gender- Institution and Inequalities at the Southern Regional Training of Trainers for Social Activists on the Convention of the Elimination of All forms of Discrimination Against women, March 12



Participated in the CapNet India Launch meeting held at NIAS, organised by SaciWaters. March 27-29

Chaired and facilitated the Discussion and Consolidation of the Constitution of the Regional and India CapNet as a part of the Global Water Partnership. March 28<sup>th</sup>

Participated in the close door meeting to discuss the UNU/INWEH proposal of setting up a Regional Training Center as part of their Water Virtual Learning Center (WVLC) in South Asia. March 30<sup>th</sup>

#### **M K Paul**

Attended the National Seminar on The International System in the Twenty-first Century and chaired a panel discussion on "Dynamics of international conflict: Issues in strategy and technology", Department of International Studies, Stella Maris College, Chennai, January 9

Chaired a panel discussion on "Beyond the combat role Defence services" during the Eighteenth NIAS Course for Senior Executives on Leveraging India's Advantages, January 24

Attended the Workshop on National Consultation on Gender Sensitisation of Sainik Boards, organised by the National Commission for Women, New Delhi, February 3

Delivered the Opening Dinner Address on "IPR on health-related issues in the Indian context, particularly medicinal plants and traditional systems of medicine" at the Intellectual Property Management Workshop, organised by

Centre for the Management of Intellectual Property in Health Research and Development, UK and National Centre for Biological Sciences, Bangalore, at Bangalore, February 9

Participated in the World Congress on Natural Disaster Mitigation, organised by the Institution of Engineers (India), New Delhi and World Federation of Engineering Organisations, at New Delhi, February 19-22

### **S Rajagopal**

Participated in the Workshop on Science and Technology to Counter Terrorism, Goa, January 12-14

Participated in the Fifth Bilateral Dialogue between Committee on International Security and Arms Control, USA and the National Institute of Advanced Studies, Bangalore, at Goa, January 15-16

Presented a paper on "Nuclear risk management: civilian facilities" at the Seminar-cum-Study on Emerging Security Environment, Escalation Dynamics and Risk Management in Southern Asia, NIAS, March 5

Presented a paper on "Terrorist threats to nuclear installations" at the Seminar on Security Dimensions of Peninsular India, organised by the Centre for Security Analysis, Chennai, at Chennai, March 22

### **Sundar Sarukkai**

Delivered a lecture entitled "Language in and outside science", University of Hyderabad, January 2.

Delivered a lecture on "Science and translation", University of Hyderabad, January 5.

Delivered a lecture entitled "Future challenges for philosophy of science", University of Hyderabad, January 6.

Delivered a lecture entitled "Mathematics, English and the question of language", University of Hyderabad, January 7.



Presented a paper entitled "Consciousness, reason and language as subjective foundations of science", National Conference on Foundations of Science, February 23- 25, IAS, February 24.

### **Anindya Sinha**

Delivered a talk entitled "Should we clone human beings?" at the Biology Programme of the Bangalore Association for Science Education (BASE), Bangalore, January 17

Delivered a talk entitled "How does ecology shape behaviour and evolution" at the Biology Programme of the Bangalore Association for Science Education (BASE), Bangalore, January 24

Delivered a lecture entitled "A brave new world: The science and ethics of human cloning" at the Eighteenth IAS Course for Senior Executives, IAS, January 27

Invited to deliver a public lecture entitled "Are bonnet monkeys conscious? Searching for an answer..." under the aegis of Looking Around, Indian Institute of Science, Bangalore, February 11

Participated in the Workshop on the Foundations of the Sciences, and delivered an invited talk entitled "Of charitable cats and cultured chimpanzees: Reflections on the science of animal behaviour and cognitive ethology", IAS, February 24

Attended the Annual Meeting of the Nature Conservation Foundation and delivered a talk entitled "Behavioural flexibility, social traditions and culture among wild bonnet macaques", Mysore, March 8

### **C Srinath**

Presented a paper on current situation in "trafficking in Women and Children" and facilitated the group discussions during a workshop in Belgaum as part of a series of regional workshops planned to develop a State Action Plan for Karnataka to combat trafficking in women and Children in line with the Supreme Court's directive to the State, jointly organized by department of Women and Child Development, Karnataka and UNICEF. February 26-27

Presented a paper on current situation in "trafficking in Women and Children" and facilitated the group discussions during a workshop in Mysore as part of a series of regional workshops planned to develop a State Action Plan for Karnataka to combat trafficking in women and Children in line with the Supreme Court's directive to the State, jointly organized by department of Women and Child Development, Karnataka and UNICEF. March 11-12

### **B V Sreekantan**

Delivered a lecture entitled "Current status of physics and astronomy" at the Platinum Jubilee Seminar of Yuvaraja's College, Mysore, January 5

Delivered the valedictory address on "Modern astronomies" at the Workshop on Indian Astronomy, MES College of Arts, Commerce and Science, Bangalore, January 11

Delivered two lectures entitled "Quantum physics and consciousness" and "In search of ultimate reality" at the National Conference on Indian Philosophy, Science and Culture for Young Scholars, organised by the Indian Council of Philosophical Research, Jamia Hamdard, January 24-25

Delivered a talk entitled "Science and human values" at the All-India Seminar on Human Values, organised by the Central Institute of Higher Tibetan Studies, Sarnath, January 21



Delivered a talk entitled "The role of experiments and technologies in the foundations of sciences" at the Workshop on Foundations of Sciences, NIAS, February 25



Delivered a talk entitled "Science and consciousness" at the Seminar on the Science of Consciousness: Wisdom, Spirituality and Culture, organised by the Department of Philosophy, University of Pondicherry, Pondicherry, March 12

### **N Sudhamani**

Participated in the three-day state level convention of the federated elected women representatives at CYCD, Bangalore organised by Karnataka Women's Information & Resource Centre, Bangalore. February 17-19

Participated in the two-day conference on grassroots participation in governance "Reconstructing Governance: The other voices" organised by Singamma Srinivasan Foundation, at NIAS, Bangalore. February 20-21

Resource person to facilitate the group discussions and gave a talk on gender and gender relations for the regional workshop to prepare an action plan for the state organised by Women & Child department and UNICEF "To combat trafficking of women and children", at Belgaum. February 27-28

Resource person to facilitate the discussions and gave a talk on gender and gender relations for the regional workshop to prepare an action plan for the state organised by Women & Child department and UNICEF "To combat trafficking of Women and children", at Gulbarga. March 3-4

Participated in the CapNet India Launch meeting held at NIAS, organised by SaciWaters. March 27-29

**Carol Upadhya**

Attended the First Annual Conference of the Monash Asia Institute on Cultures and Technologies in Asia, and presented a paper on "The Indian middle class in the new economy: Corporate culture and strategy in the IT industry", Mumbai, February 9-13

**A R Vasavi**

Attended the International Seminar on Bourdieu: Sociologist and Sociologies and presented a paper on "Towards a reflexive sociology of India" at the Department of Sociology, Delhi School of Economics, New Delhi, February 19

Delivered a lecture entitled "Emerging rurality in India" to first-year MBA students, Indian Institute of Management, Bangalore, February 27

Presented a paper on "Caste indignities and subjected personhoods" at the Seminar on Institutions and the Addressal of Collective Disadvantages, held in honour of Prof A H Kalro, Centre for Excellence, Kozhikode, March 10

Delivered a public lecture on "The making of agrarian distress", Bangalore Social Science Forum, Bangalore, March 22

**H Venugopal**

Participated and facilitated during a two-day workshop held at ISI for Capacity building of the committee members to check and prevent violence against women related to Devadasi system, Bangalore. January 17-18

Participated in public event to address and check the dedication of the girl children as Devadasis at Malapura village in Bagalkote district, organized by the local level committee. February 16

Participated in public event to address and check the violence against women on dowry practices at

Padur village in Udupi district, organized by the local level committee. February 21



Participated in southern regional training of trainers on the Convention on the Elimination of all forms of Discrimination against Women (CEDAW) for social activists organized by National Alliance of women (NAWO), Bangalore. March 12-16

Participated in the CapNet India Launch meeting held at NIAS, Bangalore organised by SaciWaters. March 27

### **VISITS BY THE NIAS FACULTY**

#### **Sundar Sarukkai**

Invited as Visiting Fellow, Centre for Comparative Literature, School of Humanities, University of Hyderabad, January 1 - 8, 2004.

### **VISITORS TO THE INSTITUTE**

Vice-Admiral Raman Puri and his team from the Directorate of Net Assessment, Government of India, New Delhi, visited the International and Strategic Studies Unit during February 4-6.

Mr Wang Dehua, Director and Professor, Institute for South Asia and Central-Asia Studies, Shanghai Center for International Studies, Shanghai, China, visited the International and Strategic Studies Unit on March 8.



## *Upcoming Events*

The Third Winter School on **System Operational Effectiveness: Systems Engineering and Profitability** will be held in NIAS during **April 19-24, 2004**. Please contact S Rajagopal ([rajgopal139@hotmail.com](mailto:rajgopal139@hotmail.com)) for more information.

The History and Philosophy of Science Unit will be organising the third NIAS Summer Course on **Understanding science: An introduction to the history and philosophy of science for college students from June 14 - 25, 2004**. This course is sponsored by the Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore. Degree students in arts, commerce and science streams are eligible to apply. For details, please contact A Deva Raju ([adr@nias.iisc.ernet.in](mailto:adr@nias.iisc.ernet.in)).



## *An Appeal for Funds*



*Building and sustaining the intellectual and social foundations of a transforming civilisation*

### **About NIAS**

India has several fine institutions, in the natural sciences, in engineering and technology, and in the social sciences. But these institutions harbour different cultures, and, indeed, are often worlds unto themselves. And there are too few bridges between and among them. The most interesting and challenging problems of the coming century *probably lie in the interfaces between these cultures and disciplines* interfaces that are studied far too little in our country. It is in these no man's lands that I believe the future of NIAS lies in subjects that do not belong to the tidy little pigeon holes that the current knowledge system of the world has created artificially, and for technical or bureaucratic convenience, not because that is the way the world operates. How to build these bridges, how to bring different intellectual and social communities together, and how to look at the future of our nation and the world with the greatest possible intellectual integrity as well as public and social confidence it is the pursuit of these aims that NIAS is taking up as its mission.

If we have to achieve these goals it is necessary for us to bring together the best in the natural and social sciences. The late JRD Tata, who conceived of this institution, saw the great need in India to form a new kind of leader he envisioned an institution that could harness creativity and commitment, mathematics and management. With my distinguished colleagues on the faculty of NIAS, and the eminent persons we count among our Associates, I am hopeful that we can carve a unique niche for ourselves

in the public and intellectual life of this country and the world, moving in the direction that our founders so clearly saw as essential for the future health of our nation.

### **The appeal**

The pursuit of our goals demands a measure of autonomy. We need financial support from diverse sources to ensure and sustain that autonomy. The early generosity of the House of Tatas and the Government of Karnataka has given us some splendid facilities. We now need to build on this foundation, diversify our sources of income and carry out programmes that are sensitive, at one and the same time, to public and national needs as well as to the demands of uncompromising intellectual rigour.

We solicit your contributions to help us to realise our goals. Bequests can be made to the NIAS Endowment Fund in the manner described below.

### **K Kasturirangan**

Director, NIAS, and  
Chairman, NIAS Endowment Committee

### **HOW TO MAKE CONTRIBUTIONS TO THE NIAS ENDOWMENT FUND**

All contributions made to NIAS or its Endowment Fund are tax deductible under Section 35, Subsections (i) and (ii) of the Indian Income Tax Act of 1961.

NIAS is registered under the Foreign Contributions (Regulation) Act, 1976, and is entitled to receive contributions from abroad directly (Register number 094420614, Account No. 0100005000200, State Bank of India, Indian Institute of Science, Bangalore 560 012). Contributions must be made by cheques drawn in favour of the National Institute of Advanced Studies; the cheques may be sent directly to NIAS, or credited to the State Bank of India account

mentioned above with independent intimation to NIAS.



The Institute welcomes contributions of any amount. Typical sums and the purposes for which they can be used and the forms in which acknowledgements can be made are shown below.

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6. *Lecture Hall*  
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12. *Endowed Research Unit*  
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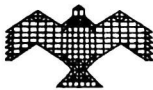
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The National Institute of Advanced Studies (NIAS) was conceived and initiated by the late Mr. J R D Tata, who sought to create an institution which would conduct advanced research in multidisciplinary areas, and also serve as a forum to bring together administrators and managers from industry and government, leaders in public affairs, eminent individuals in different walks of life, and the academic community in the natural and social sciences. The intention has thus been to nurture a broad base of scholars, managers and leaders who may contribute to tackling the complex problems facing contemporary India in a more informed and effective manner.

The philosophy underlying NIAS is given shape by its research teams, which are drawn from a variety of disciplines in the natural and social sciences. The Institute is unique in its integrated approach to the study of intersections between science and technology and social issues.



Sangeetha Menon



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