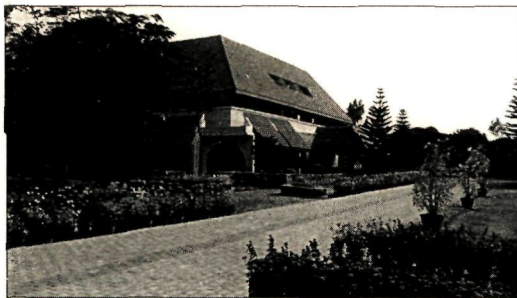


NIAS NEWS



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OCTOBER 2002

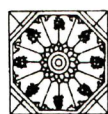




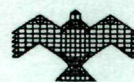
Editors' Note

We are close to the end of yet another eventful year in NIAS – and this issue of NIASNEWS completes another year as well – in its new format. We hope that in the coming year the newsletter will evolve further and that there will be more improvement in its appearance and contents. What will not change, however, is its newsworthiness; we will continue to serve as a window through which the world can glimpse the various activities of the institute. But, in the meantime, please do let us know, as many of you have in the past, what you feel about NIASNEWS and whether you would like to see some other changes brought in. Help us to discover ourselves further!

**Anindya Sinha, Hamsa Kalyani and
A Deva Raju,**
Editors, October 2002



From the Director's Desk



The Science and Society Unit, which was established on July 23, 2001 has started a new series of discussion meetings on *Foundational Issues in the Social Sciences*. The meetings draw together people from within the Institute as well as from various other centres in Bangalore, whose interests range across the natural sciences, the social sciences and the humanities. It started with the first meeting on July 1, 2002 and has been meeting regularly since then. Many interesting presentations have been made on economics, models in biology, on quality and quantity etc. Like the other new series that NIAS and RRI are organising on the *History of Ideas*, it seems as if the subject of the new forum touches an important area that strikes a chord among a wide variety of people.

We have had at various times, during the last two years, lectures at NIAS on the Simputer Project. Indeed the Institute can take a small part of the credit for the project, as the idea that an inexpensive computer is what was most badly needed in India first surfaced during the International Seminar on *The Global Village* that NIAS organised as part of the first Bangalore IT.COM event in the year 1998. That idea has now actually been realised by two of our close friends in the Indian Institute of Science, Prof Vijay Chandru, an Honorary Professor at this Institute as well, and Prof Swami Manohar, Senior Associate of NIAS, and their team. I was very happy that the Simputer project added one particularly significant honour to the several that it has already won from across the world, when it bagged the first Dewang Mehta Award for Innovation in Information Technology from the Ministry

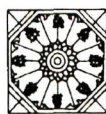
of Communication and Information Technology, Government of India. I look upon this project as typifying the best that this Institute can do, in the sense that it was inspired by multidisciplinary discussions involving computer scientists, hardware and software companies, sociologists, administrators and many other kinds of people. It renews my faith in the principles that govern our Institute. There have been other successes of the same kind and I shall write about them at a suitable time later on. Meanwhile, all of us at NIAS congratulate Prof Chandru and his colleagues on the awards they have won, and wish them even greater success in the years to come.



The Simputer team with RN, and the Trophy

Other activities have kept us busier than ever, including a meeting on *Prospects for stability in a nuclear sub-continent*, organised with partial support from the US Institute of Peace. This round table meeting was attended by representatives from the US, China and Russia, and continues the Institute's serious involvement in an examination of security issues that affect the country and the world in general.

R Narasimha



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, international and strategic studies, mathematical modelling in non-traditional areas, primate behaviour, communication and cognition, science and technology policy, sociology and social anthropology, and theory of numbers.

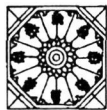
More specifically, the **Epigraphy Unit** is working on an extension of the ISRO-RESPOND project entitled “Knowledge-based processing of epigraphy texts – Phase II”. In this connection, a module has been developed to improve the performance of the proposed Fuzzy Neural Network for Brahmi Character Recognition. The network is also being trained with more patterns of each Brahmi character beginning with those from the 4th Century BC. In addition, a Fuzzy Word Classifier is being built – involving a faster segmentation technique for image binarisation using Otsu’s thresholding algorithm, connected component labelling and extraction of characters from word images, and a heuristic algorithm for splitting two touching characters that attempts to build a segmentation path by mimicking an object falling or rolling inbetween the two characters.

In this Unit, two students of the Visweswaraiah Technological University, Preethi S and Ashwini R Hegde conducted a project entitled “Feature extraction and character recognition” under the guidance

of H K Anasuya Devi during the period from March-June. This project is a part of the partial fulfillment of their BE course in Computer Science. In addition, Avinash Gangwal, Avneet Kumar Singh and Vishal Gandhi from the Regional Engineering College, Tiruchirapalli conducted a summer research project entitled “Neural network for Brahmi character recognition” in this Unit during May-June.

The **International and Strategic Studies Unit** has just been accorded sanction by the Defence Research and Development Organisation (DRDO), Ministry of Defence, Government of India, for a collaborative project to conduct research on System Engineering Approaches for Complex Mega Projects.

Savita Angadi and Prabhakar Vaidya of the **Mathematical Modelling Unit** has recently initiated a project in collaboration with Sindhu Radhakrishna and Anindya Sinha of the **Philosophy of Science Unit** to analyse vocalisations of two primate species – the slender loris and the bonnet macaque. This study aims to identify individual signatures and further characterise calls recorded from wild individuals of both these species using advanced nonlinear methods.



Publications

NIAS PUBLICATIONS

I. LECTURES

- L1-02 The inter-faith movement
Karan Singh
Member, Rajya Sabha

L2-02 *Moksha* – A critique
Raja Ramanna
Member, Rajya Sabha



II. WORKING PAPER

WP2-02 Indo-US technology relations
G Balachandran
Former correspondent, *The Hindu*

III. SPECIAL PUBLICATIONS

SP10-02 Science and metaphysics: A discussion on consciousness and genetics
Sangeetha Menon, Anindya Sinha and B V Sreekantan (eds)

SP13-02 Pahado mey naee ummeed: School padaye aur mang acchhi shiksha ki (Hindi version of the Report – New hope in the hills: The demand for quality education)
Local Education Report – Jaunpur, Uttarakhand

PAPERS

Kapur, R L. 2002. Suffering: Western psychotherapy or Eastern spiritual practices. *Psychological Foundations – The Journal* 5: 2-7

Kapur, R L. 2002. Becoming self-conscious: A psychological perspective. In: *Science and Metaphysics: A Discussion on Consciousness and Genetics* (eds S Menon, A Sinha and B V Sreekantan), National Institute of Advanced Studies, Bangalore, pp. 375-383

Menon S. 2002. "Beside the intender and the integrator": Looking at two "faces" of consciousness. In: *Science and Metaphysics: A Discussion on Consciousness and Genetics* (eds S Menon, A Sinha and B V Sreekantan), National Institute of Advanced Studies, Bangalore, pp. 164-177

Narasimha, R. 2002. A metaphysics of living systems, reductionism and emergentism in the *Yoga Vasistha*. In: *Science and Metaphysics: A Discussion on Consciousness and Genetics* (eds S Menon, A Sinha and B V Sreekantan), National Institute of Advanced Studies, Bangalore, pp. 245-255

Radhakrishna, S. and Singh, M. 2002. Home range and ranging pattern in the slender loris (*Loris tardigradus lydekerianus*). *Primates* 43: 237-248

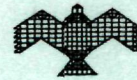
Radhakrishna, S. and Singh, M. 2002. Social behaviour of the slender loris (*Loris tardigradus lydekerianus*). *Folia Primatologica* 73: 181-196

Ramachandra, K and Balasubramanian, R. 2002. Some problems of analytic number theory – IV. *Hardy-Ramanujan Journal* 25: 5-21

Sinha, A. 2001. The bonnet macaque revisited: Ecology, demography and behaviour. *ENVIS Bulletin: Wildlife and Protected Areas, Non-human Primates of India* (ed A K Gupta), Vol 1(1): 30-39

Sinha, A. 2002. What is it like to be a monkey? Attribution and intentionality in wild bonnet macaques. In: *Science and Metaphysics: A Discussion on Consciousness and Genetics* (eds S Menon, A Sinha and B V Sreekantan), National Institute of Advanced Studies, Bangalore, pp. 356-374

Sreekantan, B V. 2002. Transcendences in physics and their implications to consciousness. In: *Science and Metaphysics: A Discussion on Consciousness and Genetics* (eds S Menon, A Sinha and B V Sreekantan), National Institute of Advanced Studies, Bangalore, pp. 403-414



ARTICLES

Kumar, A. Nuclear deterrence: a waning motif? *Deccan Herald*, August 22

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. Large groups such as these would definitely benefit from young researchers of different disciplines who can actively contribute to the progress of the group 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).

Anindya Sinha



*Distinctions for NIAS
Faculty*

Savita Angadi

Awarded a financial grant of Euro 1050 by the European Physical Society and the Ministry of Education, Science and Sport

of the Republic of Slovenia to attend the Fifth International Summer School / Conference on Let's Face Chaos through Nonlinear Dynamics at the University of Maribor, Slovenia, June 30 - July 14



Anindya Sinha

Nominated to the Council of Editors of *Resonance*, a science education journal of the Indian Academy of Sciences, Bangalore, from July 1

COURSES OFFERED BY NIAS FACULTY

H K Anasuya Devi

A course entitled "Intelligent Systems and Applications", under the Proficiency Continuing Education Programme, is being offered from August to December 2002 at the Indian Institute of Science, Bangalore



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 July to September 2002 included:

LECTURE SERIES ON MATHEMATICAL METHODS IN DATA PROCESSING

The Weekend Lecture Series, organised by the Mathematical Modelling Unit, consisted of the following lectures during this period:

'Singular matrices', P G Vaidya, July 6

'Removal of noise from data', Savita Angadi, July 20

'Phase synchronisation in EEG dynamics', Pravita Ramanand, Cochin University, August 3

'Modelling of pathogenesis', Savita Angadi, August 17

'Caste systems', Vallikiran, Jawaharlal Nehru Centre for Advanced Scientific Research, August 24

'Chaotic synchronisation', P G Vaidya, August 31

'Phase synchronisation with respect to cardiovascular and respiratory systems by Tass', Savita Angadi, September 7

'Genes and memes' P G Vaidya, September 21

Savita Angadi

DISCUSSION MEETINGS ON THE FOUNDATIONAL ISSUES IN THE SOCIAL SCIENCES

Under the aegis of the Science and Society Unit, a series of meetings have been initiated to discuss *foundational* issues concerning the relation between the natural and social sciences, humanities and the arts. The members of this group are drawn from various institutions in Bangalore whose interests range across natural sciences, social sciences and the humanities. The group meets on the first Monday of every month. In the first meeting on July 1, Sundar Sarukkai and Hans Mathew gave brief presentations on

the notions of quality and quantity, and the ways in which they occur in various disciplines. Narendra Pani gave a talk on economics in the second meeting in August. The third session in September consisted of a talk by M G Narasimhan on models in biology with the illustrative example of DNA. Finally, Prof R Narasimha spoke on models and algorithms in the October meeting.

Sundar Sarukkai

INTERNATIONAL ROUNDTABLE CONFERENCE ON PROSPECTS FOR STABILITY IN A NUCLEAR SUBCONTINENT

September 2-4

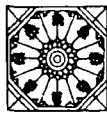
This roundtable conference was conducted as part of the research project of the International and Strategic Studies Unit on this theme, funded by the United States Institute of Peace, USA.

During this conference, several participants from Russia, USA, China and India gathered to deliberate on various issues including International NPT Control Regimes and South Asia, Non-proliferation Regimes and a Nuclear Subcontinent, Evolution of India's Nuclear Doctrine and its Future Direction, Role of Nuclear Doctrines and Force Postures, Deterrence and Stability in the International System: South Asian Dynamics, Assessing China's Role: Security Policies, Kargil Conflict to Present Stand Off: Prospects for Stability and International Terrorism and its Impact on South Asian Stability. As part of the conference, an evening's entertainment programme involving Hindustani classical music and story-telling, entitled "*Bhava Yatra*", was organised for the foreign



delegates as well as for the public on September 2. This programme was conceptualised and directed by Ms Aditi Upadhy and Ms Tara Kini from The Mallya Aditi International School Community, Bangalore.

S Rajagopal



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 July to September 2002 included the following events:

August 23 Electric power situation in Karnataka: Its past, present and future

D P Sen Gupta
Department of Electrical Engineering
Indian Institute of Science
Bangalore

Karnataka has been passing through a grave power crisis, which is afflicting its industry, commerce and agriculture, and the daily lives of its people.

Strangely, Karnataka was once the leader in power production in India: it has progressively slid back. Poor management, government interference, technical inadequacies and misleading policy proposals have all combined to precipitate the present situation. Privatisation is now being heralded as the panacea to all these problems. The lecture traced the history of the power sector spanning a hundred years, highlighting the major pitfalls, and offered the speaker's perceptions on what lies ahead and how the present situation may be improved and a worse crisis in the future averted.



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** and **Sridhar K Chari**, 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!

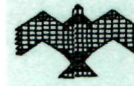
The Wednesday Discussion Meetings during the period from July to September 2002 have included:

July 17 Crying wolf: Deception in wild bonnet macaques

Anindya Sinha

Human-like deception requires that an individual who signals information create a false belief in another individual, the audience. The signaler thus needs to recognise that the audience's mind can be in a state of knowledge that is different from one's own and that it is possible to alter others' mental states without necessarily changing one's own. Such manipulations are usually tactical in that they lead to certain acts on the part of the actor that tangibly benefit the actor, with or without some corresponding cost to the audience. All such deceptive acts are thus functional, and most cases of deception, documented in primates, can be included in this category. But is primate deception truly intentional, attributable to a theory of mind? Does the deceiver actually attempt to alter the beliefs of another individual when it actively signals false information to the other? Can observational data provide insight into the mechanisms underlying primate deception? This talk focussed on the nature of deception that was encountered during a study of four troops of wild bonnet macaques, a primate species common in southern India, and discussed some of the methodological details that

need to be analysed if true mentalism has to be invoked as an explanatory mechanism underlying complex social behaviour in primates and other animals.



July 24 Animal welfare blues: On public perception of animal welfare and its significance to managing wild animals in captivity

Avanti Mallapur

The concern for a lack in captive wild animal welfare (CWA) is not new, though there has been an increasing awareness in many countries only in recent years. The scientific study of CWA assesses the quality of life of animals in artificial environments by considering the variability of the environment and an animal's response to it. A captive environment presents challenges that are different from those presented by a natural habitat and this tends to influence the animal's ability to cope with its surroundings. Hence, there is an intense need to define and measure problems in CWA before attempting to solve them, especially in a developing country like India where CWA science is in its infancy and local expertise is hard to find. 'Animal Welfare' blues addresses the significance of CWA and its effect on the management of wild animals

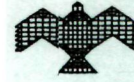
in captivity and its implications for wildlife conservation in our country.

August 7 Conserve wildlife! Sure, but how?

M D Madhusudan

Today, few people dispute the need to conserve our country's wildlife heritage. As wildlife fades away from the rest of the countryside, conservation efforts have focused on wildlife reserves as the very last refuge for our endangered flora and fauna. In reality, however, even within wildlife reserves, humans vie with wildlife over access to land and resources. Over a million people, most of them poor and disadvantaged, reside and eke out a livelihood within India's wildlife reserves; even greater numbers of people exert pressure on the reserves' resources from outside. Besides local people, corporate and state-sponsored establishments also wrestle for control over wildlife reserves and the resources they contain. Thus, given that most of our endangered wildlife are highly sensitive to human pressures that abound in our wildlife reserves, how do we actually conserve wildlife? This was the central question that the speaker raised and debated in his talk.

August 14 Modelling of pathogenesis and prognosis



Savita Angadi

A mathematical model showing the interaction of normal cells, cancer cells and food supply was shown to yield interesting results. This model was extended to a more general case of pathogenesis. From these models a prognosis factor was computed that relates to the eventual outcome of the disease.

August 21 What is, and is not, in our genes

Prabhakar G Vaidya

Although the title of the talk was inspired by a book by Steven J. Gould about whether an individual's personal characteristics are inherited or acquired, the word "our" in this presentation referred collectively to all human beings. What is it that we have that is common among all human beings but not to be found among all other species? Candidates for this list are language, culture, and perhaps consciousness. The main point that the speaker raised is this, how many of these unique characteristics are "wired in" in our genes? Scholars in linguistics such as Chomsky, and in psychology such as the followers of C.G. Jung would pass the burden of

most of these to our genes. However, from an information theoretic perspective, there are serious difficulties with this approach. What followed was a discussion of alternative hypotheses that need to be considered.

September11 Developing a national strategy for undertaking projects that also have global environmental benefits

Dilip Ahuja

The Ministry of Environment and Forests, Government of India has asked NIAS to assist in the formulation of a national strategy to develop and implement projects that also have global environmental benefits. Several problems have been identified as plaguing the current portfolio of such projects. The portfolio has become stagnant and has stopped growing; projects take too long to develop and to implement and lack ownership amongst those charged with executing them; and finally, while there is a large number of project concepts in the pipeline, there is no coherence or a strategic framework for their selection and endorsement. During the seminar, an introduction was provided to the functioning of the Global Environment Facility and the solutions proposed for rejuvenating the portfolio discussed.

The **guest lectures** at the Wednesday Discussion Meetings during this period included:



July 10 Recreational mathematics

Aswatha Narayan Muthkur
Bangalore

Numbers have always been known to possess many curious properties. Manipulating numbers have held great fascination for mankind, and they have been used extensively in ancient astronomy science, technology, and all kinds of number games. This talk focussed on such properties of numbers and their uses, with special reference to astronomy in the Ramayana.

August 28 Studying language behaviour

R Narasimhan
CMC National Fellow
Bangalore

It has been argued persuasively that societies of the future will be 'knowledge societies' and an educated person of a knowledge society, while being a finely honed specialist in his/her own professional domain, would have the ability to UNDERSTAND other domains of knowledge – for instance, what each one is about; what are its central concerns; what are its important areas of ignorance, its problems, and its challenges.

In this spirit the speaker discussed language behaviour, an area of knowledge that he have been actively interested

in for over three decades. He listed some large questions we are concerned with in trying to study language behaviour. He primarily concentrated his discussion on what our capacity to function in the language modality buys us, and what literacy adds to our basic, universal capacity to function in the oral mode.

SPECIAL PROGRAMMES

There were two public lectures, two public concerts and a roundtable discussion organised at the Institute during the period from July to September 2002

Public lectures

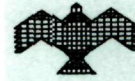
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| August 13 | Aspects of Tibetan culture in Ladakh
<i>Wendy Marr</i>
Art historian and freelance lecturer
United Kingdom |
| August 31 | Tools and techniques for satellite image processing
<i>Shantanu Chowdhury</i>
Satellite Applications Centre
Ahmedabad |

Public concerts

- | | |
|-------------|--|
| August 13 | Hindustani classical music – A vocal recital
<i>Ashwini Bhide Deshpande</i>
Mumbai |
| September 2 | <i>Bhava Yatra</i> : A concert of Hindustani classical music and story-telling |

Conceptualised and
directed by:

Aditi Upadhy and *Tara
Kini*
The Mallya Aditi
International School
Community, Bangalore



Roundtable discussion

August 14 International terrorism
Feodor Starcevic
Director
United Nations (UN)
Information Centre
New Delhi

In his introduction to the discussion, the speaker gave an account of the evolution of international terrorism and the reason for framing international agreements and treaties in the global context. He also stated the objective of the convention and gave details of the countries who are parties to this agreement.

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). The talks in this series held during the period from July to September 2002 included:

July 12

The idea of God

R L Kapur
NIAS

The idea of God is very old and has kept a powerful hold on the minds of human beings over millennia of history. At the turn of the twentieth century it was believed that, with the advancement of science and a better understanding of the universe, the idea of God will weaken, but that does not seem to have happened. Surveys and polls show that more than 90% of people continue to believe in God or have faith in some kind of spirituality. Psychologists agree that God and spirituality answer questions which science cannot answer and provide meaning to our life. Freud thought that God was an illusion, which gives comfort against the onslaughts of unpredictable nature. Neurophysiologists believe that God and religiosity are experiences generated when specific areas of the brain are stimulated; some believe in a genetic basis to the idea and yet others argue that without assuming an Intelligence behind everything one cannot explain various accidents which led to the birth of

the universe and life. This presentation examined the above issues, traced the history of God and spirituality in various cultures and speculated on the future of the concept.



August 9

On the revolutions in the fundamental concepts of the physical sciences

B V Sreekantan
NIAS

Fundamental concepts of science like space, time, mass, energy, and even void and causality, underwent radical changes due to some of the theoretical ideas and experimental discoveries of the late nineteenth and early twentieth centuries. While these changes contributed in great measure to the advancement of technology, which in turn contributed to advancement of science, they also had serious implications for the philosophy of science and brought to focus the limitations of science. This seminar elaborated on a few typical examples of the experimental compulsions in the domain of physical sciences that led to major revisions of our ideas on the fundamental concepts.

June 14

What is space?

Sundar Sarukkai
NIAS

Space, seemingly so simple, is also one of the most difficult ideas to comprehend. Some of the important issues that arise in philosophy, science and the arts have their genesis in ideas of space. We normally speak as if space surrounds us, has an infinite spread, is completely penetrable but otherwise devoid of qualities. Yet it is difficult to understand how this non-perceivable entity, which exerts no causal influence, exists. The history of the concept of space constantly engages with this simple question about the existence of space. There are two traditional answers to this question. One argues that space exists and develops many subtle reasons for this position. The other claims that space is nothing more than relations between real objects, thereby excluding the possibility of empty space or space without matter. Newton's mechanics and his first law dealing with inertia in particular are based on the belief that there is some real entity called absolute space. (The belief

in the existence of absolute space and its relation to the existence of God is an interesting subplot in the larger story.) The debate on whether there is something called absolute space catalysed many important developments in physics and mathematics, including that of non-Euclidean geometries and theory of relativity.

In following the historical development of the ideas of space in philosophy and science, some of the following issues were also addressed in this seminar: the relationship of geometry, topology and space, the structure of space, the implication of left and right handedness for the existence of space, definitions of dimensionality of space, relationship between perception, motion and space, and understanding the experiences of space in our daily lives.



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**.

July 31 Portrait of a Tamil Queen
 through Kalki's fiction

 Readings from *Ponniyan
Selvan* by Kalki (translated
 by C V Kartik Narayan)

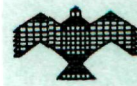
 Sharada Srinivasan
 NIAS

The historical novel Ponniyan Selvan, set in the age of the Great Imperial Cholas of Tamil Nadu, was penned in serial form in the 1950's in the Tamil magazine Kalki by celebrated writer R. Krishnamurthy, who wrote under the pseudonym 'Kalki'. Ponniyan Selvan, (literally, The Beloved of the River Goddess Ponni, i.e. the Kaveri) is another epithet or title of the 10th Century Chola monarch Raja Raja Chola in whose time the famed Brhadisvara temple was built at Thanjavur in the delta of the Cauvery, that great river which has witnessed much history and strife on its banks continuing into the present day.

In his inimitable style, Kalki (1899-1954), who was a freedom fighter and a Gandhian, explained

that he chose the pseudonym Kalki because, like this tenth avatar of Vishnu, he too aspired to be something of an epoch-maker who could destroy existing norms and conventions for newer ones. Therefore, even as Kalki recreates an engaging world of soothsayers, imperious Chola queens and palace intrigues in this entertaining work of historical fiction, he also injects into it some gentle satire about contemporaneous social issues. Indeed, his parody on medieval internecine rivalries can perhaps find a certain allegorical resonance even today in the problems between neighbouring states over the sharing of the waters of the Cauvery.

Kalki also paints spirited portraits of Chola womenfolk such as the widowed queen Sembian Mahadevi and princess Kundavai, whom inscriptions confirm to be highly authoritative figures and great patrons of art and architecture. At a time when the country has been rocked by incidents of the resurgence of the anachronistic practice of sati (the self-immolation of widows) and sati worship in Madhya Pradesh and



Rajasthan, it is reassuring to remind ourselves that medieval Indian history has also produced some positive role models for Indian women.

Sharada Srinivasan (author of this piece) read selected excerpts from 'The First Floods', the first volume of a five-part English translation of Ponnian Selvan by C V Kartik Narayan (Macmillan, New Delhi), which seems to do justice to the racy and witty original Tamil narrative of Kalki.

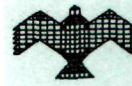
September 18 *Is shab ke chehre hain hazaaron*
(The Night has a Thousand Faces)

A reading of poetry in Urdu and English.

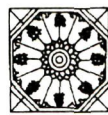
Amitabh Joshi
Jawaharlal Nehru Centre
for Advanced Scientific
Research, Bangalore

Dr Amitabh Joshi recited a selection of his poems (in both Urdu and English) and also provided translations of the Urdu poetry for the benefit of the non-Urdu speakers in the audience. The session generated a lot of discussion about the history and development of Urdu poetry in India in general, and about his own poetry in particular.

CONSCIOUSNESS DISCUSSION FORUM



The Philosophy of Science 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/ and register themselves or subscribe to the group by sending an email to NIAS-forum-on-CONSCIOUSNESS-subscribe@egroups.com. For more details, please contact Sangeetha Menon (smenon@nias.iisc.ernet.in).



*Meetings attended
and lectures delivered
by NIAS Faculty*

JULY TO SEPTEMBER 2002

Dilip Ahuja

Made a presentation on "Policy instruments for the mitigation of greenhouse gases" at the Outreach Workshop on Climate Change: Policy Options for India—Lessons from Working Group III of the IPCC, New Delhi, September 5

Participated in the Indo-German Forum on International Environmental Governance: Panel Discussion on International Climate Policy before New Delhi, at Berlin, Germany, on September 25 and on Indo-German

Cooperation on Climate Change Issues at
Potsdam, Germany, on September 27

Savita Angadi

Attended the Fifth International Summer School / Conference on Let's Face Chaos through Nonlinear Dynamics and presented a paper entitled "A method to enhance noise reduction for data generated from a known differential equation", authored by P G Vaidya and Savita Angadi, as well as a poster entitled "Nonlinear dynamics of pathogenesis and prognosis factor" authored by Savita Angadi and P G Vaidya, University of Maribor, Slovenia, June 30 - July 14

Attended a workshop on Recent Advances in Nonlinear Science: 2002 Programme, Bangalore, July 31 - August 2

B K Anitha

Delivered a talk on "Gender issues in the water sector" at the National Workshop for Middle and Senior-level Officers of the Department of Major Irrigation, Kerala, organised by the Water Resource Development Centre, Kozhikode, July 18

Participated in the workshop on Challenges Ahead before Women's Movement for Sustaining Women's Struggle for Democracy and Peace, organised by the National Alliance of Women, Bangalore, July 29-30

Prepared training material for district-level health workers on the "The situational analysis of adolescents and girl children" for a meeting organised by NIPCCD, Bangalore, August 27

Participated in a discussion meeting on the Education Bill, called by the Minister for

Primary and Secondary Education,
Government of Karnataka, Bangalore,
September 5



Sridhar K Chari

Presented a paper entitled "Deterrence and stability in the international system: South Asian dynamics" at the International Roundtable Conference on Prospects for Stability in a Nuclear Subcontinent, Bangalore, September 3

Ajanta Dutt

Attended a workshop on Recent Advances in Nonlinear Science: 2002 Programme, Bangalore, July 31 – August 2

Sangeetha Menon

Attended the Fourth Biennial Conference of the World Association of Vedic Studies and delivered two talks: "Being of and being with consciousness: Essential differences between Indian and contemporary approaches" at the symposium on Indian Theories and Approaches to Consciousness and "Binding experiences: Looking at being of self and self-transcendences in the context of a discussion on transpersonal psychology of the *Bhagavad Gita*" at the symposium on *Bhagavad Gita*, Dartmouth, USA, July 12 and 13

Coordinated the symposium on Indian Theories and Approaches to Consciousness at the Fourth Biennial Conference of the World Association for Vedic Studies, Dartmouth, USA, July 12

Delivered an invited talk entitled "Binding experiences and epistemologies: Instances from Indian philosophy (*darsana sastra*), Indian psychology (*moksa sastra*) and Indian dramaturgy (*natya sastra*) in the

context of recent discussions on consciousness" at the inaugural conference on Completing the Global Renaissance: The Indic Contributions as a part of the Global Renaissance Series, organised by the Columbia Center for Buddhist Studies, Columbia University and the Infinity Foundation, New York, USA, July 28

Delivered a plenary talk entitled "Being and BEING: Current discussions on consciousness and Yoga traditions" at the Thirteenth International Congress of Vedanta, Oxford, USA, September 13

Delivered a public lecture entitled "Love, wisdom and self-realisation in the Indian spiritual literature", West Chester, USA, September 14

Delivered an invited talk entitled "Binding experiences and the explanatory gap: Recent multidisciplinary discussions on consciousness", Spelman College, Atlanta, USA, September 26

Delivered two invited talks entitled "Being with transcendence: Experiencing the *Bhagavad Gita*" and "Blossoms of the beyond: Indian ways of thinking, acting and experiencing, in the context of current discussions on consciousness" at the Centre for India Studies, State University of New York, Stony Brook, USA, September 28 and 30

Delivered an invited talk entitled "Self-exploration and consciousness in classic Hindu thought", Western Michigan University, Kalamazoo, USA, October 7

N Shantha Mohan

Participated in and presented a paper on "A perspective from the field: Indian women's groups' experiences in monitoring

temporary special measures at the local level” at the workshop on Temporary Special Measures: Article 4 of the UN CEDAW, organised by IWRAP-Asia Pacific, New York, USA, August 17



Delivered a talk entitled “Gender, environment and sensitive citizenship”, Jyothi Nivas College, Bangalore, August 30

Participated in a discussion meeting on the Education Bill, called by the Minister for Primary and Secondary Education, Government of Karnataka, Bangalore, September 5

Participated in a workshop on Village Governance in Karnataka, organised by the Ford Foundation, Bangalore, September 9
Participated in and presented a paper on “Experiences on implementation of the concluding comments of the CEDAW” at the South Asia Regional Conference on Facilitating the Implementation of the CEDAW Convention, organised by UNIFEM, Colombo, Sri Lanka, September 11-14

R Narasimha

Delivered a talk entitled “Boomerangs: Why they come back to the thrower”, Bangalore Science Forum, July 16

Delivered an invited lecture entitled “Some thoughts on the Indian half of the Needham question: Axioms, models and algorithms” at the Global Renaissance Conference I: Completing the Global Renaissance: The Indic Contributions, Phoenicia, New York, USA, July 25-28

Delivered the Indian Institute of Technology, Kharagpur, Golden Jubilee Commemorative Lecture entitled “The Megha-Tropiques Project: A new satellite

for atmospheric research", Kharagpur, July 31

Delivered a talk entitled "The atom and consciousness in *Yoga-Vasistha*", Yugayatri, Bangalore, August 11

Attended the General Assembly and Bureau meetings, International Union of Theoretical and Applied Mechanics, University of Cambridge, UK, August 16-19

Delivered The Sixth Yunchuan Aisinjiro-Soo Distinguished Lecture for 2002 on "Recent advances on stability of non-parallel shear flows: The minimal composite approach" University of Illinois, Urbana-Champaign, September 17

M K Paul

Delivered a lecture on "Disasters: How do others manage?" for the participants of the Second NIAS Course for Senior Level IAS Officers, June 28

Delivered a talk on "Infrastructure and growth of higher education" at the National Service Sector Conclave, organised by the CII Institute of Quality, Confederation of Indian Industry, Bangalore, July 13

Invited to deliver the guest lecture on "Disasters: How do others manage?" for the officers of the Aircraft and System Testing Establishment (ASTE), Air Force, Vimanapura, Bangalore, July 25

Sundar Sarukkai

Delivered a talk entitled "Limitations of science as a knowledge system", India International Centre, New Delhi, July 23

Delivered a talk entitled "Limits of science", Molecular Reproduction and

Developmental Genetics Laboratory, Indian Institute of Science, August 9



Delivered a talk entitled "Interdisciplinary approaches", Mount Carmel College, August 27

Anindya Sinha

Delivered a talk entitled "Cognitive mechanisms underlying primate deception", Department of Entomology, University of Agricultural Sciences, Bangalore, July 11

Delivered a talk entitled "Cloning: Myth and reality", Nightingale Elders' Enrichment Centre, Bangalore, July 27

Attended the symposium on Trends in Modern Biology and delivered an invited talk entitled "A beautiful mind: Social cognition in wild bonnet macaques", Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, August 2-4

C Srinath

Participated in the discussion meeting on the Report of the Working Group on Decentralisation and Subsequent Developments in Karnataka, organised by the ISS, Bangalore, August 21

Sharada Srinivasan

Gave a book reading-cum-dance demonstration, entitled "Ponniyan Selvan: The beloved of the river goddess Ponni (i.e. the Kaveri)" at The Book Club, Bangalore, September 18. Reminiscent of the *harikatha* style of story-telling, this demonstration employed the use of Bharata Natyam dance gestures (*mudras*) and expressions (*abhinaya*) in the reading of

excerpts from the book *Ponniyan Selvan* by the Tamil writer Kalki

N Sudhamani

Participated in the workshop on Challenges Ahead before Women's Movement for Sustaining Women's Struggle for Democracy and Peace, organised by the National Alliance of Women, Bangalore, July 29-30

Delivered a talk entitled "Skills for good governance" to the Chairperson of the Women Dairy Cooperation of Karnataka at a meeting organised by NIPCCD, Bangalore, August 28

Participated in a workshop on Village Governance in Karnataka, organised by the Ford Foundation, Bangalore, September 9

Prabhakar Vaidya

Attended a workshop on Recent Advances in Nonlinear Science: 2002 Programme, Bangalore, July 31 – August 2

Delivered a lecture entitled "Applications of chaos theory to 2-D interpolation of irregular data sets and to image compression", ISRO Headquarters, Bangalore, August 30

H Venugopal

Participated in the discussion meeting on the Report of the Working Group on Decentralisation and Subsequent Developments in Karnataka, organised by the ISS, Bangalore, August 21

Participated in a workshop on Village Governance in Karnataka, organised by the Ford Foundation, Bangalore, September 9

VISITS MADE BY THE FACULTY

R L Kapur

Visited Montreal, Canada, August 3-7, for a meeting to plan for his ongoing research on *Sanyasis* in the Himalayas

R Narasimha

Visited the laboratory of Prof Michael Gaster at Queen Mary College, University of London, August 15

VISITORS TO THE INSTITUTE

Mr Feodor Starcevic, Director, United Nations Information Centre, New Delhi, visited the International and Strategic Studies Unit on July 14. He also addressed the NIAS faculty during this visit.

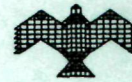
Smt Guramma Siddareddy, Chairperson, Task Force for Women Empowerment, Government of Karnataka, visited the Gender Studies Unit to discuss the Task Force report on August 5.

Dr Harry Barnes and Dr Thomas Graham of the Asia Society, USA, visited the International and Strategic Studies Unit on September 25



Upcoming Events

The Gender Studies Unit will be organising the National Workshop on Women and Water Network on November 25-26 at NIAS. This workshop will be organised jointly by the Gender Studies Unit of NIAS, the Women in Water Network of South India and UNIFEM. For more details, please



contact N Shantha Mohan
(shantham@nias.iisc.ernet.in)

The Second Winter School of the International and Strategic Studies Unit, part of the research programme on System Engineering Approaches for Complex Mega Projects, funded by the Defence Research and Development Organisation, Ministry of Defence, Government of India, is scheduled to be held during the first week of December 2002. For more details, please contact S Rajagopal (rajgopal139@hotmail.com)

The Fourth NIAS Annual Course for ISRO Scientists and Engineers on the theme "Indian Space Enterprise: Technology for Sustainable Development" will be held between December 16-21, 2002. For more details, please contact Dilip Ahuja (dahuja@nias.iisc.ernet.in)

An international symposium on Science and Beyond: Cosmology, Consciousness and Technology in the Indic Traditions will be held at NIAS from January 8-11, 2003, under the program of "Science and Spiritual Quest" of the Templeton Foundation, USA. This symposium will bring together scientists, philosophers, psychologists and spiritual leaders from India and the rest of the world to dialogue on what essentially constitutes the pursuit of knowledge. This will facilitate defining the frontiers and what falls in the 'beyond' of scientific knowledge. Discussions on questions of philosophical and spiritual issues according to the convictions and experiences of scientists as well as discussions on scientific and empirical questions according to philosophers and spiritual leaders are expected to generate a forum to bridge knowledge communities and unite them for global concerns both at personal and institutional levels. It is

particularly expected that the conference will bring forth a dialogue, in a global context, on Indian traditions of science, art, music, medicine, philosophy, psychology and spirituality. The program of the conference will include invited lectures, panels and discussions. For more details, please contact Sangeetha Menon (prajnana@yahoo.com)



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 pigeonholes 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.

R Narasimha

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.

1. *Books*
Can be donated as books or as funds to be utilised for purchase of books
Every book donated or purchased out of donation funds will carry a label indicating the name of the donor
2. *Objects of art* (paintings, sculpture etc.)
Rs 10,000/ and above
Will carry a small plaque indicating the name of the donor

3. *Annual Endowed Lecture* (speaker residing in India)
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4. *New Office Space*
Rs 5 lakh per room
Room will carry a plaque indicating the name of the donor
5. *Visiting Professor* (from India or abroad)
Rs 10 lakh or US \$ 25,000
May be named with concurrence of donor
6. *Lecture Hall*
Rs 20 lakh or US \$ 50,000
May be named with concurrence of donor
7. *East Wing, Main Building*
Rs 40 lakh or US \$ 100,000
May be named with concurrence of donor
8. *West Wing, Main Building*
Rs 50 lakh or US \$ 125,000
May be named with concurrence of donor
9. *Endowed Doctoral Scholarship*
Rs 10 lakh or US \$ 25,000
May be named with concurrence of donor
10. *Endowed Fellowship*
Rs 30 lakh or US \$ 70,000
May be named with concurrence of donor
11. *Endowed Professorship*
Rs 40 lakh or US \$ 90,000
May be named with concurrence of donor
12. *Endowed Research Unit*
Rs 80 lakh or US \$ 187,500
May be named with concurrence of donor



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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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Published by National Institute of Advanced Studies, Indian Institute of Science Campus, Bangalore 560 012 and printed by Verba Network Services, Bangalore

For Private Circulation only