

Artist Statement

'Once Given Universe' - Nick Turvey

Light, Gravity, Emulsion paint, Cold air. - 6.4 x 3.2 x 3.4 metres.

How frequently do we see what we have learnt to see, rather than what is actually there? This installation uses a variation of a phenomenon known as Mach's Bands, named after physicist Ernst Mach. The title is a key phrase from his work, asserting the pre-conditions for all observation and speculation, which C.S. Unnikrishnan at TIFR has built on in developing a theory of Cosmic Relativity. This argues, contrary to Einstein, that the speed of light is only constant within a frame of reference provided by the mass of the entire Universe. Light, in its plenitude of rational and spiritual meaning, becomes once again part of tangible kinematics, rather than an abstract anomaly. For me, this restores an underlying reality to the Universe, and a coherence to our individual experiences. In this installation, Light, and our perception of it, is both subject and medium. Is one half darker, or is the other lighter? An illusion of relativity conceals the underlying unity. In the context of Delhi, a city that I have experienced as fractured by a million competing solipsists, I hope the work reminds us of the importance of a shared conception of space.

Nick's Project Update

A lot of the first three weeks was spent sourcing materials for experiments with lasers, before realizing the limited workshop facilities meant my time could be better employed in other ways. Through a series of conversations with scientists in Delhi, I have been probing ideas about how mathematical thinking might be represented through superposition of mental imagery. I plan to continue this on a visit to the Tata Institute for Fundamental Research in Mumbai next week. Two particular topics whose sculptural potential has aroused my interest are Calabi-Yau spaces and non-classical states of light.

'Life Matters' - Joanna Hoffmann

Video installation, sound by Hemant Sreekumar

For centuries life has been considered as the fundamental feature of the Universe. Only recently we have acknowledged that life is of almost inconceivable insignificance, and the human race itself is, as S. Hawking put it, "just a chemical scum on a moderate-size planet, orbiting around a very average star in the outer suburb of one among a hundred billion galaxies." The definition of life has changed drastically since the first philosophers were discussing the fundamental principle (achre) of nature. The traditional Aristotelian definition of life, describing it in terms of excretion, reproduction, growth and irritability, is no longer valid because "animated matter, matter in the form of living organisms, is not the basis of life. It is merely one of the effects of life, and the basis of life is molecular."

All life on the Earth is based on genes – molecules that are replicators consisting of 4 kinds of smaller molecules A,C,G,T joined in a chain called DNA. The genetic code with slight differentiation is common to all life on Earth, having evolved from a single event that took place around 3,35 billions years ago. On a biological level, only DNA is alive; the rest of the

organism (animal, plant or microbe) is merely a part of genes' habitat. The vital feature of a gene is that it contains knowledge about its niche. Life is the physical embodiment of knowledge, and adaptation means to cause the environment to keep that knowledge in existence.

With special thanks to: International Centre for Genetic Engineering and Biotechnology
ICGEB New Delhi Prof. Virander Chauhan, Director

Mammalian Biology: Structural and Computational Biology :Dr Amit Sharma Group Leader,
Jasmita Gill, ManickamYogavel, Rachna Hora

Mammalian Biology: Malaria: Prof. Virander S. Chauhan, Group Leader, Dr Malhotra
Pawan, Reshma Korde

Mammalian Biology: Virology: Dr Shahid Jameel, Group Leader, Charu Tanwar, Manjula
Kalia, Vivek Chandra, Amjad Hussain, Kartika Padhan

Joanna @ ICGEB

I based myself at the Dept. of Mammalian Biology: Structural and Computational Biology. I found there really nice and helpful people just mentioning Dr Amit Sharma who is the group leader and Jasmita Gill (research assistant) or Rahna Hora. Their research concentrates on structural principles that govern protein-based bio-molecular interactions with the special focus on malaria. I already started some animations using the images of cell, proteins and crystals... It is all extremely interesting and inspiring.

'Archetypes' - Rohini Devasher

Digital print on archival paper .44 x 44 & 44 x 114 inches

'Archetypes' are explorations in plant morphology, inspired by J. W. Goethe's search for "that which was common to all plants without distinction", which led him to evolve a purely mental concept of the archetypal plant or the 'Urpflanze'. The 'Urpflanze' described 'one basic form that manifests in the multitude of single plant individuals; and within this basic form, there lies the potential for endless transformation, by which manifoldness is created out of oneness.'" These ideas were developed and enlarged upon by plant morphologist Agnes Arber, who argued that a classification based on similarities of form could be more instructive than one based on evolutionary relationships.

I was fortunate to be able to work with Prof. Mohan Ram and Dr. Rajesh Tandon at the Dept of Botany in Delhi University. Conversations with them led me to compare plant structural similarities at a macro and microscopic level. With their collaboration, I was able to use complex images of plant surface features as viewed under a scanned electron microscope, including hair like trichomes, highly ornamental pollen structure; and stomata with mouth like apertures.

These images were then restructured with photographs of parts of diverse plant species to create hybrid organics that float in a twilight world halfway between imagined and observed reality, strange denizens of a science fiction botanical garden. In the scientific realm, as the rate of genetic modification accelerates, and plants are modified with plant, animal and human genes, the boundary of form and function blurs and these strange hybrid organics become more of a possibility of what could be.

With special thanks to Prof. Mohan Ram and Dr. Rajesh Tandon at the Dept of Botany (Delhi University, North Campus) for their generosity in sharing their time, research and resources.

Rohini's "Archetypal Plant"

I am interested in exploring some ideas put forward in Goethe's Botanical writings in which Goethe's search for "that which was common to all plants without distinction" led him to evolve a purely mental concept of the archetypal plant.

Summation [pH]1 to [pH]n - Abhishek Hazra

Single Channel Projection, 4 Monitors, sound -Dimensions Variable ..My current project is an attempt to look into the social history of science research in India. The work done at the Arts & Science Residency at KHOJ, New Delhi focuses on the early history of the Indian Association for the Cultivation of Science (IACS) in Calcutta - one of the first science research institutes in the country, set up in 1867 by the physician and science enthusiast Dr. Mahendra Lal Sircar. Through an ironic citation of C.V Raman's research on spectroscopy, I have attempted to revisit some of the controversies around 'pure' and 'applied' science that marked the establishment of AICS. In 1928, it was at AICS that Raman discovered the effect that now bears his name.

Hazra's manipulation of Spectral Data

I am trying to work with spectroscopy and the statistical manipulation of spectral data. I am working with Prof Ram Ramaswamy and his doctoral student Vikram Singh at the School of Physical Sciences in JNU. Presently I am trying to explore the various ways a given data set can be perturbed and the effects this has on the divergence of the resultant data set. It has been really interesting to converse and exchange ideas with Ram. One of the images, is the view from my studio at KHOJ. The studio window overlooks a wall draped in a green creeper. I often watch the changing patterns of light and shadow on this variegated surface. However, within this shifting texture of light, what is really interesting is a faint, illuminated rectangle that becomes most prominent around late morning and early afternoon. In an earlier residency, the artist Asim Waqif had installed mirrors all around the KHOJ studios, quite a few of them in the most unlikely of places, part of an interesting installation. Some of them have survived. That illuminated rectangle is nothing but the light reflecting off one of them – installed on the edge of the roof and directed towards the facing, creeper laden wall.

Between rendering files and mulling over intensity and wave numbers, it has been quite an interesting experience trying to track this rectangle through the day. It also reminds me of the heliostat – a simple device that reflects an unvarying beam of sunlight through the day by synchronising its movable mirror to the movement of the sun across the sky – that was used by C.V Raman for his experiments with light scattering.

