

**dispatch #4 from ralph  
calcutta, january 07, 2006**

**the third week in calcutta**

**DAY #17, Sunday, January 01, 2006**

Long walk around the lake this morning. It dawned on me that the sights were out of this world. Being here is like living a dream. Check out that woman riding in a bicycle rickshaw, dressed to the nines, talking on her cell phone. Have to start taking photos and videos with my cell phone. Maybe that is what she was doing?

Quiet day working in my room. Half for my NSF grant on agent based models of financial markets, half on chaos and consciousness in preparation for my last lecture in Calcutta, at the RKM Institute of Culture, two weeks from today. Unlike my usual lectures on chaos theory, this one will take some preparation. I am reading the second volume of conference proceedings, *Life, Mind and Consciousness*, from the meeting two years ago, to get some inspiration and background.

Special dinner tonight, actually different. Tomato chutney, just imagine. Happy New Year. Met a couple from California, Tim and Rebeca. Well, born in California. She is a professor of Indology in Bloomington, has been coming to Calcutta for 20 years, and speaks and reads Bengali. She said there were anit-American (that is, get-out-of-Iraq) billboards all over Calcutta in Bengali. Almost all other billboards are in English.

After dinner, it seemed to me that the stairs were getting much easier, after climbing 10-12 flights every day for two weeks. Some kind of record: 25 flights yesterday. I am getting in shape for the ski season.

**DAY #18, Monday, January 02, 2006**

Warmer today. Nice day at the WBUT office. No calls, few emails, internet and electricity flawless. Nice lunch box. Worked on my financial market modeling project, catching up. Came home at 3:30 pm, to a couple of frustrations. For one, my attempt to buy a cheap Indian cell phone (they do not rent them) failed for the third day in a row. Apparently India is somewhere south of Italy when it comes to appointments. I then repaired to the research library of the RKM to read up on the medieval Kashmiri theory of Spanda (vibrations). I found a short cut, one flight instead of five, from my room to the library. But once there I could not get the book I wanted. Nobody seemed to know how to find a book in the library. I must return tomorrow when Dr. Sen Sharma is present. Sort of a cooling off from my initial excitement about the library, the conference, etc.

**DAY #19, Tuesday, January 03, 2006**

Another quiet day at WBUT. Spoke with Ashoke (the vice chancellor) about conspiracy theories, inciting caste and race riots. He shared the theory that the India/Pakistan conflict in Kashmir is a fiction promoted by both sides in a tacit conspiracy to keep both governments in power. I told that many of my students believe that the CIA orchestrated the World Trade Center attack. Back home, I succeeded at last in obtaining and reading the book on Spanda in the research library. I could understand nothing, but Prof. Sen Sharma is going to explain it to me. I received my official invitation from Swami Prabhānanda to the 3rd conference on Science and Consciousness at the RKM beginning in 10 days. Indian cell phone quest failed once more.

## **DAY #20, Wednesday, January 04, 2006**

My laundry came back clean and pressed. One shirt and one pants -- my entire wardrobe. Fourteen rupees (\$0.30) for the lot. Breakfast with Tim and Rebecca and Arvin. Arvin was leaving this day. He slipped a note of 50 or 100 rupees to our server, Samir, and got caught by the dining room majordomo and severely reprimanded.

Prasun Roy, my friend from Calcutta (now working far away in Delhi) who had arranged my invitation to WBUT beginning two years ago, called to say he would visit me around 11 am. This would be a brief visit as I would be fetched at 11:45 am for my first lecture at Jadavpur University (JU).

Then I went to the Cyber Point, our local internet cafe, to catchup the email, as I will not be going to my office at WBUT today. There I noticed they have Skype installed, which may provide a means for me to call Ray at home for free. Then to the neighborhood AirTel office for the sixth and last time, trying without success to buy an Indian cell phone, so I could have daily internet connection at home at the RKM. No avail. I do not have the patience required to negotiate a business transaction in India.

Then to the RKM office to buy tickets for the music festival on January 12. Shiv Kumar Sharma, Hari Prasad Chaurasia, masters I have listened to for thirty years, playing right here at my home base !!! Tickets went on sale day before yesterday for all three performances, at 25 rupees (half a dollar) each, and I went to get tickets for all three. Woe is me !!! All sold out already. But I found out that special reserved seats were available for the astronomical sum of 100 Rs (\$2) each, so I managed to get into two of the performances.

Next, the phone rang at 11:30 am, Prasun had arrived. I went down with my shoulder bag all set for the lecture, which was lucky, as I found not only Prasun waiting with his son Charlie, but also Prof. Roy Chowdhury of JU, who had come early to fetch me for the lecture. We all packed into the minivan for the short ride to JU. After tea in the office of the chair of the physics department with all the senior professors, we filed into the lecture hall. The chair announced that I would introduce myself, then lecture on subjects of my choice. I had nothing in mind as I had no advance idea of the audience, so I allowed myself the luxury of telling the history of chaos theory as a personal autobiography, which never would have occurred to me otherwise. The theme that emerged was also a serendip: the synergistic partnership of pure math and computer graphics.

It was at about this time that I began to hear a persistent complaint, that students these days are not interested in mathematics, which is seen as being of little trade value when it comes to IT jobs. We are all agreed that theoretical science research will have little future without a strong math program in the schools. Also, I learned that most cars on the roads are driven by professional drivers. I guess the ones that survive are pretty skilled.

Got back home just in time for lunch: the standard alu gobi and rice and dal, but topped by a surprise: fresh fruit salad for desert. And it is date season in Bengal.

## **DAY #21, Thursday, January 05, 2006**

At breakfast, continued an ongoing discussion with Tim. He is working on a PhD in Higher Education. naturally I asked what that was, having never heard of the field. He is studying the spiritual well-being of undergraduate students. We discussed the unfulfilled spiritual yearning of

most people in America, and to what they turn after dissolution with their family religion. Tim was born conservative Christian and served in Vietnam.

Second lecture at JU. A nice couple, both physics professors, offered to take me around Calcutta on Saturday. Which is a good thing as I was beginning to get really bored with all these lectures to small audiences who mostly do not care. What am I doing ??? It seems like I am known here exclusively by my first book, written 40 years ago, and I have to be invited, no matter what. I have gradually come to know that math is greatly waning here, even physics grad students have no math at all. The administrators want to develop courses in chaos theory, as that might be a way back into math literacy, for the whole culture.

Before dinner time, Atin Das arrives to go with me to the neighborhood Airtel mobile phone store. He is furious that they have not met their appointments with me, and have been so lame in general. I had given up yesterday, but Atin got me to try once more. This time the owner of the store, Ravi Gupta, was actually there. Atin berated him, apparently telling him that I am an extremely important scholar. Thus word, scholar, apparently has major mojo in India, for they send me home with a phone to try out, and India's best expert on bluetooth laptop/mobile phone interconnection has promised to come to my white fort at 8:30 in the morning to wave his wand. Atin tells me, on the way home, that Ravi Gupta is non-Bengali, he is Hindi speaking, and in fact almost all shopkeepers in Bengal are non-Bengali, as Bengalis do not like business.

#### **DAY #22, Friday, January 06, 2006**

Believe-it-or-not !!! Two young men arrive on a motorcycle at 8:30 am sharp and in 30 minutes of frustrating experimental work they succeed in connecting the two gadgets and logging into the internet. That is as far as they got, as the local cell tower seems to be broken. Well, you can't have everything just now, maybe later.

Then at 10 am, the car arrived to take me to my big lecture at ISI. Once there, I succeeded in connecting my powerbook to their local area net, sort of breaking in as it were, as instructed by my son John. I received my email, but before I could send any replies, the ISI internet system died. Again. It is very difficult to work effectively without the sort of infrastructure we are used to in the USA, and we can only admire the Indian intellectuals for the quality of their work. For myself, I feel handicapped to the point of paralysis without my fast and robust internet and library access.

The second ISI lecture was more of a hit than any of the preceding ones. Very keen and diverse audience.

Got home a bit late, went directly to the Airtel office. Ravi Gupta (the owner) was there, and yes, he confirmed that the GPRS system (data component of the GSM cell phone network) happened to be out of whack in our part of town, and when it will be fixed is anybody's guess. I suppose he knew this all along, but not sure. In any case, he ended up offering to loan me a Blackberry for free (with which I could get my email, it uses a cell system alternative to GPRS). I declined, as only eight days remained of my stay in Calcutta. End of this sorry tale.

#### **DAY #23, Saturday, January 07, 2006**

Yippee, no lectures today. I am to see Calcutta with the physics professor couple from JU, Subhankar Roy and Jaya Shamanni. First, an early visit 9 am from Sisir and Mala Roy who came to say goodbye, they are leaving tomorrow and I will not see them until perhaps Summer in Fairfax, VA. Then at 11 am arrived Subhankar and Jaya in a rented car with driver, and off to

see the City of Joy. First, the Maidan, a huge park, it must be equal in size to Central Park in NYC. However, it is full of horses, cows, oxen, sheep, all peacefully grazing. And yes, tons of people. We browse the Victoria Monument, a museum of Indian history. I was struck by the fabulous architecture, which mostly vanished after the arrival of the Europeans in the 16th Century, Then Park Street, that I had seen briefly two weeks ago en route the Asiatic Society. Very spiffy shops and smart cafes. We lunched on sandwiches and cappuccini, very good. Then College Street, home to many colleges, we walked around three of them, and strolled past (I kid you not) HUNDREDS of used book stalls.

Then, to off to Belur Matt (pronounced mutt) which is the world headquarters of the Ramakrishna Mission. I thought I had had enough already, and should call it a day, but no, we were almost there !!! I-told-you-so, totally, when we got stalled in history's worst traffic jam on the Vivekananda Bridge over the Ganges (it is HUGE) for TWO HOURS between JUGGERNAUT trucks proud of the fullness of their exhaust. Smugly I pulled out my micropore mask, hidden in my shoulder bag all this time, I never thought I would need it. On arrival the hardship was quickly forgotten, as the place, on the shore of the Ganges, is gigantic, beautiful, full of respectful people. It has accommodation for over a thousand monks !!! I ran into the American nun met at the RKM two weeks ago. Then home over a different bridge, took about an hour and a half.

Home at 6 pm, late for my date with Prof. Sen Sharma. Fortunately he was still at his office in the RKM Research Department, about to leave. He had two reprints and some hand written notes for me on tattvas, the levels of consciousness according to ancient Indian philosophy. We make a date for next Monday to discuss all this.

This day was a blessing.

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### **Sidebar on Lectures**

I have mentioned that every day or two I am fetched by car to some distant destination to give a lecture, and my pal Paul Lee wrote to ask: what are they about? So here's what.

The first one (day #5, my second day in Calcutta, Dispatch #2) before the venerable Calcutta Mathematical Society, was an advertisement for new branches of mathematics, e.g., chaos, fractals, computer graphics, and all that, with mention of agent based modeling, my current passion. Audience of seven, no reaction. It seems that remain very satisfied with the old branches.

The next day began a series of five daily lectures, an elementary course in chaos theory for professors. Here I was able to experiment with a new pedagogic strategy, since my textbook, *Dynamics the Geometry of Behavior*, profusely illustrated with 850 hand drawings by Chris Shaw, was newly digitized as an eBook. I prepared each lecture slightly in advance by adding bookmarks to the PDF files of the eBook, so I could show the desired page with one click of the mouse. Way better than Powerpoint !!! Seemed to work quite well.

The next lecture, #7, was on day #16 at ISI, my most sophisticated audience so far, professors of physics and applied math. I told the whole history of computational morphogenesis, that is, simulation of pattern formation in membranes: how the leopard gets its spots, trees get branches in rings, brains can recognize a smell, and so on. Spans 1972 (Prigogine's group in Brussels) to my work with Jack Corliss and John Dorband with the world's fastest

supercomputer in 1990. I had planned to show a video of the latter, sort of a simulated acid trip, but their VCR did not like my video cassette. A tough sell without the mind-boggling graphics.

And then, #8 on day #20, the first of two lectures at JU. This is one of the best universities, but I was warned that this is the time of year for exams, so none of the students would be able to come. In fact, there was a small but very keen audience of physics and math professors who actually know, use, and teach chaos theory. But I had no advance idea what they were interested in, so I prepared nothing and did not even bring Hypatia, my trusty 12 inch Powerbook. Over tea in the chair's office just before starting, I asked what was wanted, and was told, the software I use for experiments. I compromised and offered the role of computer graphics in chaos research, the interplay between pure math and computational results, in the context of my own first twenty years of research. I promised a computer demo in the next lecture.

Then lecture #8 very next day #21, the second lecture at JU. I showed complex dynamical system software, Madonna and Netlogo, to a smaller audience. And the next day #22 was the day for my "big lecture" at ISI. This is to be a fantasy on chaos and consciousness, mathematical models for telepathy, with (again) my videos that do not work here.

Lecture #9, day #21, sophisticated audience again at ISI including faculty from engineering, physics, math, ... and psychology !!! Chaos and consciousness, cellular dynamical models for ideas, forms, perceptions. Background in Greek (neoplatonic) and Indian (kashmiri shaivism) philosophy with support from personal experience.

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