

## On Attending Conferences

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**A**s a researcher and an academician I get many opportunities to give technical lectures on various aspects of computer science. On the other hand, a formal occasion to share other important but non-technical ideas rarely comes by. Recently I was presented with one such opportunity quite unexpectedly.

I was attending a two-day conference on parallel and distributed computing, where surprisingly many of the participants were teachers from various undergraduate colleges. Though the organizers had initially invited me to give a technical lecture, they later requested me to deliver the inaugural address as well.

I approached the dais with great trepidation, because I had little experience in giving non-technical lectures. Fortunately, by the time I completed the preamble to my talk by presenting a quick overview of the various technical sessions that had been planned, and also by congratulating the organizers for their good work in planning the conference programme so well, I could make up my mind that the theme of my talk would be to motivate the audience to meaningfully participate in more conferences. What follows below is an annotated transcript of the rest of my lecture.

### Why attend conferences?

A question that often comes to the minds of some of us is, why do people organize conferences, or rather why should we bother to attend conferences

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at all?

As teachers, as academicians, it is important for us to keep ourselves informed about the latest developments in our field, and also in related areas. Attending conferences and meeting others is an effective way of getting to know some of the most recent ideas and advances.

As the Rig Veda says:

*“ā no bhadraḥ kratavo yantu viśvataḥ”*

“Let noble thoughts come to us from all directions.”

A way of making this come true, is to expose ourselves to all directions, by attending conferences and meeting other people. You might say that you can keep yourself informed by reading books and journals; but there is a far greater limitation to how much you can read, compared to how much you can learn from speaking and listening to others. As the organizers have taken the initiative to arrange this conference, and they have done their job very well, it is up to us now, as participants, to make this conference a success.

As participants, how do we contribute to a conference? What are our roles in it?

## Speaking in conferences

Firstly, whenever we attend a conference we should try to give a talk in it. Of course, if you have to lecture in a conference then you cannot just write down what you have read in standard textbooks and speak about those things. You lecture on things that you have been actively thinking about, in other words you lecture on your research work. That brings us to a more basic question, why should we bother to do any research work at all. You might say, as a teacher my job is to teach, and as long as I am doing that, why should I bother about doing research at all. Well, teaching is a necessary part of our job, but it is not sufficient to just teach. It is not enough to just keep reading what others have invented before; we must try to bring our own new perspective to things. As John Milton calls, in *Paradise Regained*, every such person who just keeps reading without imaginative thinking:

*“Deep-versed in books and shallow in himself.”*

There is a great danger of becoming shallow if we do not do any research. You might ask, how can we do research in a subject like parallel computing when it is so advanced, and when we are so new to the field. Well, quite often complete newcomers can bring very novel ideas into a discipline.

## **Outsider's have oracles**

You might have heard about this incident about the Americans. The Americans were of course the first people to send a manned spacecraft to the moon, and they also launched many flights into outer space. But soon after their early space flights, they encountered a problem. The astronauts on the space crafts could not write properly during the flights. This was the time before pocket digital diaries, and the reason was that none of the existing pens would function properly in outer space. Under zero gravity and low pressure conditions, ink flow in the pens would not be uniform, so smooth writing was not possible. As the Americans are very rich, and also they work very hard – they floated many research projects to solve this problem. After spending about thirty million dollars, and almost two years of research work, they were successful in making a pen which could write in outer space, and it functioned satisfactorily. At this stage, it struck one of the Americans to find out what the Russians were doing about the same problem. You know that the Russian, Yuri Gagarin, was the first man to travel to outer space, and the Russians were pioneers in space travel. When the Americans contacted the Russians to find out their solution to the problem, it turned out that the Russians were using a pencil.

Of course, what I told you was just a joke, but quite often in reality, rank outsiders have brought completely novel ideas to various disciplines. When I look at the history of science, many such instances come to my mind.

The Frenchman, Louis de Broglie, predicted the wave nature of electrons, and created the field of wave mechanics. Before him it was known that waves could behave like particles, in the famous theory of the photoelectric effect by Albert Einstein. But on the other hand nobody, including Albert Einstein, had imagined that the dual phenomenon of particles behaving like waves could also exist. Louis de Broglie predicted this in 1924, and it was experimentally confirmed by Davisson and Germer in 1927 by observing electron diffraction by crystals. The surprising thing is that Louis de Broglie was not a physicist by training. He was a historian, and had graduated in literary studies. Physics was just his hobby, he learnt physics much later in life.

Another example that comes to my mind is the discovery of the law of conservation of energy. The energy conservation principle was not discovered by Newton, but it was independently discovered by a number of others. One of the earliest was the German, Julius Robert von Mayer, who was not a physicist, but a surgeon by training and profession. He observed that the

colour of the blood of his Dutch East Indian patients, was a deeper shade of red compared to his patients back in Europe. From this he conjectured that they absorbed less oxygen, as they needed lesser energy to maintain their body temperatures in the hotter climates. He conjectured that heat and mechanical work were both forms of energy, and later after improving his knowledge of physics, calculated a quantitative relationship between them, and discovered the energy conservation law.

You might think, France and Germany are developed countries and scientifically highly advanced; so the above cases are not surprising at all; but surely such instances could not have happened in developing countries. Let me tell you another example, this time from the field of economics and finance. In the past few years, one of the brightest new ideas to emerge in the world of banking and finance is the notion of micro loans and micro credits. The person who invented them, Muhammed Yunus, is from Bangladesh, which is one among the poorest countries of the world. Now I don't have the time to tell you more about micro loans and micro credits, you can talk to your colleagues in the economics department to find out more about it. However I do want to tell you that these ideas have proved to be a very effective way to fight poverty, and Muhammed Yunus has been appointed by the World Bank on its advisory committee, and he has also been nominated for the Nobel prize in economics. Isn't it unbelievable that the World Bank needs to take the expert advice of someone from such a poor country like Bangladesh, in order to fight poverty effectively.

As Georges Clemenceau once said:

*“War is too important a matter to be left to the Generals.”*

Similarly, parallel computing is too important a subject to be left to the computer scientists. Even if your background is not in Computer Science, but it is in Physics, or Mathematics, or Chemistry or any other subject, you can still make a worthwhile contribution to research on parallel computing. New ideas often emerge from novel applications.

## **Listening in conferences**

That brings me to our second major role as participants in conferences. It is not enough to talk about our new ideas, it is equally important that we listen to the others.

Most of us are very fond of talking. If you let me stand here for two days, I can keep talking to you for the entire duration of this conference, without getting tired at all. But if you make me sit in the audience to listen, then I would get tired within ten minutes.

That reminds me of an incident that I heard from my Italian friends. The Italians are like us, they too are very fond of talking. Once it so happened that the traffic police in various cities across the world, noticed that quite often there were accidents involving public transport buses serving the airports. A common reason for these accidents was traced to the fact that drivers were getting distracted, because people, particularly tourists, would start talking to the bus drivers, to ask for directions or for some other reasons. So it was decided to put up signs on the buses to prevent this from happening. In buses in New York, the boards read:

*“Please do not speak to the driver.”*

The Americans have a reputation for being very crisp and direct in their messages. Buses in London had boards that read:

*“You are kindly requested to refrain from speaking to the driver.”*

The English are said to have a knack for constructing complicated sentences. In Germany the boards read:

*“It is strictly forbidden to speak to the driver.”*

The Germans are said to be fond of issuing orders. In Italy, on the other hand, boards on the buses read:

*“Please do not answer the driver.”*

because the drivers would start speaking to the passengers first, even before the passengers had a chance to talk to them.

While the Italians are like us in the fact that they like to talk, they are different from us in the fact that they also like to listen. Most of us lack this quality of listening. Talking is very easy, it is far more difficult to listen. We can develop our listening skills by attending conferences. As teachers we can also experience a kind of role reversal, how do our students feel while listening to us lecturing to them on subjects that are unfamiliar to them.

## **The energising siesta**

Quite often one finds low attendance in sessions for contributed papers – people just attend the sessions with their own talks, and then leave. Many people tell me that they feel sleepy while listening to the lectures. To this I would say that it is perfectly fine if you go to sleep during some of the talks. Peter Medawar, who got a Nobel Prize in medicine for his studies on organ transplantation, writes in one of his essays that the most refreshing sleep he ever gets is during lectures. I have the same experience – give me a five-star hotel room, the most comfortable bed, and a long night of sleep, and I would still wake up feeling slightly tired. But if I could go to sleep for a few minutes during a lecture, then invariably I wake up feeling completely refreshed. So, if you find some people sleeping during your lecture, don't feel offended. Similarly if you happen to go to sleep during some lectures, then don't feel guilty at all. When you wake up, you will find yourself feeling refreshed to listen to the remaining lectures.

**T**o summarize, it is important that conferences should be organized, and it is essential for our intellectual growth that we participate in conferences. As participants in conferences, while it is important that we speak, at the same time it is equally important that we listen.