

Madusree Mukerjee



Madusree Mukerjee always wanted to be a physicist but landed up doing science journalism and later became an independent writer, straying away from science. In tête-à-tête with her during one of her visits to Bangalore, Mukerjee shares her journey from a trained nuclear physicist and former science writer–editor at *Scientific American* and *Physics Today* to being an author of critically acclaimed literary works, *Churchill's Secret War: The British Empire and the Ravaging of India During World War II* and *The Land of Naked People: Encounters with Stone Age Islanders*. She talks about her work and love for science.

Glimpse of early educational training

I graduated with a degree in physics from Jadavpur University. Then I got a Master's from Rensselaer Polytechnic Institute in upstate New York, followed by a Ph.D in 1989 from the University of Chicago, where I worked under Yoichiro Nambu, particle physicist and recent winner of a long-deserved Nobel Prize. I was interested in particle physics, but at the time Nambu was involved in a problem in nuclear physics, so I was drawn into that field. Subsequently I obtained a postdoctoral fellowship at the California Institute of Technology.

Motivation and inspiration behind penning down books

My initial motivation was curiosity. While in India I had grown up hearing about 'savages' on the Andaman Islands, who used to kill freedom fighters who escaped into the jungle from the prison there. I learned that a few of these aboriginals were still around, and my curiosity was piqued. I wanted to understand

how these people experience modern industrial culture. That became my first book, *The Land of Naked People*, published in 2003. A Guggenheim fellowship supported me during the writing of the book, for I had given up my editorship at *Scientific American* for the project.

After the research that went into that book, I felt I had acquired some understanding of the experiences of indigenous peoples. I had no comprehension of the ordinary poor, however. So I decided to study the Bengal famine of 1943. Physicists often simplify problems, and I figured that if I understood famine, which is poverty in the single dimension of food, I might understand something about poverty. That turned out to be theme of my second book.

During my early research into the famine I came across Frederic Alexander Lindeman, close confidant of the British Prime Minister Winston Churchill, and realized that he was a physicist. During my extensive education as a physicist, I had encountered the names of many luminaries, but never this one – who was described by C. P. Snow as the most powerful scientist in history (see Box 1).

So I read every biography of Lindemann that I could find and discovered the role he played in World War II, and especially in the famine. *Churchill's Secret War* was the outcome of my extensive research into him and others who played an important part in India's war effort and the resulting famine.

About books

The Land of Naked People relates the devastating experiences of the hunter-gatherers of the Andaman Islands as they come face to face with modern civilization.

Churchill's Secret War explores the hitherto unknown story of how the British War Cabinet exacerbated the Bengal famine and caused the death of at least 3 million people.

From a physicist to a science writer and now author of two books, how has the journey been so far?

Becoming a writer was accidental (smiles). I was desperately looking for a job to sustain myself after a traumatic

Box 1. Lindeman as a physicist

The most powerful scientist in history – Alexander Frederick Lindeman, did research in physics at the University of Berlin, with the pioneering Walther Nernst with whom he developed the Nernst–Lindemann theory of specific heat. His achievements also include the Lindemann melting-point formula and the Lindemann electrometer. He confirmed theories, first put forward by Albert Einstein, on specific heats at very low temperatures. For this and other scientific works, Lindemann was elected a Fellow of the Royal Society in 1920. In 1911 he was invited to the Solvay Conference on 'Radiation and the Quanta' where he was the youngest attendee.



Not many know that in 1915, Lindemann joined the staff of the Royal Aircraft Factory at Farnborough. He developed a mathematical theory of aircraft spin recovery, and later learned to fly so that he could test his ideas himself. Prior to Lindemann's work, being in a spinning aircraft was almost invariably fatal.

During World War II he became the most trusted advisor to the British Prime Minister Winston Churchill. He acquired a peerage and was known as Lord Cherwell.

Web sources: http://en.wikipedia.org/wiki/Frederick_Lindemann,_1st_Viscount_Cherwell, <http://www.answers.com/topic/frederick-alexander-lindemann#ixzz1YNN0cMaPHe>

postdoc at Caltech. My boss there, I later learned, had written in my reference letter that I was incapable of doing independent research (laughs). It was at this time that I gave a written test for *Physics Today* and I got through. After about a year at *Physics Today*, I left for *Scientific American*.

How did your training in science help in your journalistic stint?

I feel that the basic methods of research are the same, whether you are studying physics or history. There is a reality out there, at least I believe there is, and it is my task to find that reality and also to find a model that best fits those facts. The model is necessary to make the facts comprehensible. You have to be true to the facts – whether of nature, or of human experience. You might have an elegant theory about what happened, but it is useless unless it fits the facts. It is best to first uncover the facts and then develop a theory.

As a science journalist

Fortunately, I did not have to struggle much. Things just fell in place. When you are in academics, you come to believe that there is no intellectual life outside academia, that it is a desert out there. That was completely untrue. I found myself among highly intelligent, stimulating and supportive colleagues who taught me the basics of journalism.

As the editor of Scientific American

It was a great working experience. At *Scientific American*, I was lucky enough to work on a variety of topics and discovered I could master almost anything, except for, perhaps, medicine and information technology.

I served in this position for almost seven years, before I gave up my job to be with my newborn baby and family in Germany. During this period I wrote as a freelancer on issues related to health, environment and others (<http://www.scientificamerican.com/author.cfm?id=47>).

Challenges you faced while writing something which was not science, your field?

In school I had never learnt history – so it took years of study just to learn the basics for *Churchill's Secret War*, for instance. I spent a long time understand-

ing the economic history of India under British rule. I had to buy a lot of books, but fortunately I had a friend who worked as a librarian at Frankfurt University, who got me a lot of reference works I needed. I travelled to the UK to check various archives there and found a treasure trove of previously unknown material on the Bengal famine.

In retrospect, I think my intellectual isolation helped. I worked almost entirely on my own. I tried to ask for advice from historians, and many of them did not reply. A couple of them told me my research was misplaced. Thank heavens, I persisted and found things that no one had even bothered to look for. It seems to have made a difference that I was approaching the problem as a journalist or perhaps even as a detective, not as a professional historian. So I pursued leads that had been dismissed by the experts as dead ends.

Which role did you enjoy the most – scientist or writer?

I feel more productive as a writer and free to explore wherever my curiosity takes me. In physics I did not have that sense of power and freedom, perhaps because my technical abilities did not match my ambitions.

Are you still doing science writing?

Not much. I regret that I have forgotten so much about physics, given that I always wanted to be a physicist.

Science writers are always blamed for misquoting a researcher's work. Your say.

I think it is extremely important to get things right. After writing a piece always do a factcheck, which might involve letting a scientist see parts of what is written. Getting things wrong is inexcusable. Having said that, I have sometimes found that people I interview later want to retract things they have said to me in an unguarded moment. I usually respect that wish.

On the controversy with Amartya Sen

My disagreement with Amartya Sen is minor. He wrote a seminal paper on the Bengal famine in which he argued that there was enough food to go around, and that the famine was caused by something

he called entitlement failure – essentially the loss of purchasing power of some segments of society. I believe his theory of entitlement is profound and important, but I don't think the Bengal famine provides proof of it. The statistics on availability of grain at the time is of poor quality and I see no reason to trust it to the extent that he did.

How do you take on criticism? (In the context of negative review from some reviewers.)

If the criticism is well deserved, I take it on-board and modify the piece if I can. If it is misplaced, I defend myself.

Future activities and assignments

I'm interested in understanding to what extent India has been re-colonized. As you know, India was initially conquered and occupied by a corporation, the East India Company. Since then, corporations have grown in size, power and influence, so that in some countries they have more say in decision-making than the citizens do. And that is true even of democracies. In India, for instance, resources such as iron and aluminium ore are being sold at throwaway prices, despite the enormous environmental and human damage the extraction causes. And taxpayers are funding the paramilitary and police forces that help the companies in their acquisitions – just as in the colonial times. How did this travesty come to be, and what are the consequences for the planet? Is there a way out? These are the issues I want to explore.

Any tips or message for budding science journalists

Always try to get to the bottom of a story. Don't be satisfied with what you are told by one researcher – talk to his critics as well. Check the facts on the ground, to the best of your ability. One of the most enlightening experiences I had as a journalist was when I wrote about the Bhopal gas disaster. I found that almost every one of the claims that Union Carbide had made at the time of the leak – that there would be no permanent lung damage, no neurological damage, no reproductive damage, etc. – was false. This was early in my career, and a real eye-opener.

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