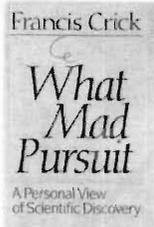


What Mad Pursuit: A Personal View of Scientific Discovery

Vasant Natarajan



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Francis Crick

Basic Books Inc., New York

1988.

The book under review is by a giant in the field of molecular biology who is being honoured in this issue of *Resonance*, Francis Crick. As the subtitle says, the book gives his “personal view of scientific discovery”. There is no better way to introduce the book than to repeat the quotation from Oscar Wilde given at the beginning: *Experience is the name everyone gives to their mistakes*. Crick concentrates as much on his mistakes as on his successes, to give us a real flavour for the way scientific research is done and new discoveries are made.

As a physicist, it was fascinating for me to read about the experiences of a person who was trained as a physicist, but made some of the greatest contributions to biology. In the first part of the book, he gives an account of his early years and how he had to decide on a good research problem after the war. He was 30 years old by this time, had no published papers and no PhD. But he wanted to do fundamental research and actually considered his lack of qualification as an advantage because “by the time most scientists have

reached thirty, they are trapped by their own expertise” and find it difficult to switch fields.

So he goes about finding the right problem using a most interesting test, which he calls “the gossip test”! He finally decides to work on the borderline between the living and nonliving, essentially trying to understand “the secret of life”. As I read this book, I watch my nine-month-old daughter play around me, and as I see her perfect eyes, her perfect nose, her perfect fingers, I cannot help wondering that the way nature makes such near-perfect copies of parents is something that humans must have pondered about ever since we became conscious. Thanks to the work of Crick, Watson, and others, every schoolchild now learns about the genetic code in our DNA and how it determines the physical attributes of an organism. But this was a total mystery even a short 100 years ago. Perhaps this mystery is the origin for our belief in God, indeed the possibility that only an Intelligent Creator could have designed such perfection is a powerful argument often used to justify His existence. But, as brought out in the book (and quoting the works of Richard Dawkins and others), Mother Nature is a “blind watchmaker”, the only tools she has are random mutations, natural selection, and lots and lots of time. And using these tools, she has made beautiful “watches” – the wide variety of species we see around us, each one with perfectly designed organs such as eyes and noses!

To return to Crick, he now has an important research problem to work on, and he decides

to use the tools of the emerging field of molecular biology to attack this problem. Those were the heady early days of molecular biology when almost anything you did was published in *Nature* and papers had just a few authors; it makes you wish that you could go back in time and be a part of this excitement. Crick discusses a little bit about his momentous discovery (along with Watson) of the double-helical structure of DNA, but refers the reader to Watson's 'unputdownable' book (*Double Helix*) for details. Rather, he concentrates on giving his personal perspective on the discovery. He admits candidly that if they can take credit for anything, it is for identifying the right problem and working on it doggedly, because "chance favors the prepared mind". He says that the beautiful structure of DNA made Watson and Crick, and not the other way round. Meaning that they became famous because they had helped reveal such beauty that already existed in nature. He answers questions like "What if Watson and I had not put forward the DNA structure, what was it like to live with the double helix, and am I glad that it happened as it did?"

The rest of the book contains various chapters on his further research work in molecular biology, including the genetic code, the triplet-base sequence for amino acids, the "central dogma", messenger RNA, etc. Again he concentrates more on the way research is done and the several blind alleys, especially their difficulty in identifying the right RNA that plays the role of the messenger. The book is filled with anecdotes and reminiscences that

any lover of science will enjoy, such as his giving directions to a taxi driver to the Cavendish Laboratory, or his first and only attempt to deliver a seminar in French. At one place is a wise statement that "if you have something critical to say about a piece of scientific work, it is better to say it firmly but nicely and to preface it with praise of any good aspects of it." I wish more anonymous referees would use this rule while reviewing papers!

The book ends with a long chapter on his later years containing his work on brain sciences and life in California. It also has two appendices containing an outline of molecular biology and the genetic code. There is a collection of photographs including one with the model of the DNA double helix and some from the Nobel Prize ceremony. As I finish the book, I realize that I have not only learnt a lot about how research is done in biology, but also picked up information about the molecular basis of life along the way.

It is always more fun to read a book with a nine-month-old around. Every time I pick up the book, she comes crawling at breakneck speed and tries to grab it. Perhaps, she too is curious to find the "secret of life". It is a bit early for her to start, but you, my dear reader, should satisfy some of that curiosity by reading this book. After all, DNA may have existed for a few billion years, but we are the first creatures to become aware of it.

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