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REVIEWS

Geniuses, Heroes and Saints. The Nobel Prize and the Public Image of Science, by Massimiano Bucchi, translated by Tania Aragona (MIT Press), 2025. Pp. 208, 23 × 15 cm. Price \$35 (about £27) (paperback; ISBN 978 0 262 55184 7).

This is the second book I have reviewed about the Nobel Prizes. The first one¹ concentrated on a selection of Prizes awarded in topics related to astronomy and analysed the reasons for awarding the Prize in each case. This book is very different: it is a broad review of Nobel Prizes as a whole (*i.e.*, all the Prizes awarded in the categories set out in Nobel's will), looking at the statistics and at how they affected the public view of science in general. It is an excellent translation (and slightly updated version) of an Italian original published in 2017.

The book starts with the origin of the Prize* and closes with a list of all Nobel winners up to 2024 in the three scientific categories recognised in Nobel's will: Physics, Chemistry, and Physiology or Medicine (Literature and Peace are not significantly discussed in the book). In between, there are chapters with such intriguing titles as 'How do you win a Nobel Prize?', 'How Einstein won the Nobel Prize and why he almost never received it', and 'How not to win a Nobel Prize: the story of Lise [Meitner] and other Prize 'ghosts'' (people who deserved but didn't receive a Nobel Prize).

*In 1888 April, Nobel (who developed dynamite) was shocked to read his own obituary in the paper, under the headline 'The Merchant of Death is Dead'. He realised that the journalist had confused him with his older brother Ludwig, who had died a few days earlier, but that the headline was aimed at him. Horrified that that would be how he would be remembered, he left a sum in his will to enable the foundation of a Prize for excellence in five fields — the three sciences listed above, literature and the promotion of peace — and indeed that is how he is remembered today.

Interestingly, Einstein received his Prize for discovering the photoelectric effect, not for relativity, which was too complicated for most scientists to understand and provoked strong opposition to him in the German scientific community, including by two Nobel winners (Lenard and Stark). As a result, he withdrew from appearing as an invited speaker at a scientific meeting in 1922 because he had been warned that he was on a list for assassination (partly because he was a Jew — another Jew, the Foreign Minister, had already been killed by gunmen a few months earlier). He kept a low profile after that. However, he was not present at the ceremony in Stockholm where the award was made — he was on a visit to Japan. He received the actual medal and certificate in July of the following year, at a conference in Gothenburg, at which the King of Sweden was sitting in the front row.

Einstein was not the only Prize winner to be absent from their award ceremony. Most were those awarded the Prizes for literature and peace, but there were some scientists who were either ill or unable to attend for other reasons (some were prisoners of war). Some Prizes were handed over in other countries, including in California. Most dramatically, three German scientists refused their Prizes in 1939 as a protest against the Nazi boycott of the Prize.

People who didn't receive the Prize were often nominated many times without success, for example Lise Meitner, nominated for both Physics and Chemistry. Many people think that Rosalind Franklin deserved a share in the Prize awarded to Watson and Crick, but the delay in recognising the double helix (which was crucially dependent on a famous X-ray image taken by her) meant that she had died before their nomination was accepted and the Prize cannot be awarded posthumously. More recently, Jocelyn Bell Burnell suffered from astrophysics not being recognised as physics (the Prize was awarded for the design and construction of the telescope). I note without comment that all three are women.

The author then takes his two final chapters to discuss both whether the award makes the Prize-winner more interesting and whether their physical appearance affects anything. Because the author is Italian, he uses the number of articles in the Italian paper *Corriere della Sera* as evidence, and there is some evidence, although the largest number of articles are naturally about Italian Prize-winners. Einstein is the most mentioned of the non-Italians. But a wider survey shows that some people (such as Einstein) were famous before their Nobel, others became famous because of the Nobel, and some were relatively unknown after their win. Why? National identity is one factor as is the type of discovery and the name attached to it, such as the double helix and Kroto and colleagues calling their new form of carbon 'fullerenes' after Buckminster Fuller — easily remembered. Another reason for winners being known to the general public is when the winner participates widely in public debates, even on topics outside their particular expertise.

Finally, there is their public appearance, exemplified by Einstein, whose general appearance so much resembles a caricature of a mad scientist. But in his youth, he also exuded a boyish freshness that made an Italian journalist describe him as like a saint! Other public figures tend to be treated in the same way, and a lay iconography emerged, making scientists into symbols of the social and cultural role of science. Many famous scientists (such as Newton and Pasteur) were regarded as models of asceticism in their disregard for anything (such as food) outside their research work. The model of a saint is emphasised by the relics that are kept after their death. Galileo's right hand is exhibited in the Galileo Museum in Florence, and Pasteur's body was embalmed and buried in a mausoleum in the Institut Pasteur in Paris.

Laureates are expected to be modest and humble about their work, to dress appropriately, and generally to behave with appropriate deference to important people. Those who abuse their privileged position by making inappropriate remarks become, in James Watson's words, "a nonperson" (he had criticized the intelligence of African Americans).

So — are scientists special or are they ordinary human beings? They are both, and the Nobel Prize gives a context for balancing this uncertainty — special enough as scientists to receive the Prize, but quite normal humans in daily life. The book finishes with an epilogue, entitled 'Geniuses, Heroes and Saints — how the Nobel Prize (re)invented the public image of science', reflecting his belief that any Laureate may be seen as one of these three categories. There is also an appendix, listing all the Nobel Laureates in the sciences from 1901 to 2024.

This was a fascinating book to read, but I found it very difficult to review because of the breadth of its coverage. I can nonetheless recommend it strongly. — ROBERT CONNON SMITH.

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Starborn: How the Stars Made Us — and Who We Would Be Without Them, by Roberto Trotta (Basic Books), 2023. Pp. 350, 24 × 16 cm. Price £22 (hardbound; ISBN 978 1 529 34608 4).

Spanning almost all the languages of Switzerland, Trotta was born in the Italian-speaking part, then obtained an MSc(Hons) in Physics from the ETH Zurich, and a PhD in Theoretical Physics from the University of Geneva, before spending a couple of decades at Oxford and Imperial College, working mainly in cosmology. After becoming Professor of Astrostatistics at the latter (where he remains a Visiting Professor) in 2019, he moved to SISSA in Trieste in 2020 to establish a new Data Science group and PhD programme (and was also Visiting Professor of Cosmology at Gresham College, 2019–2022). A recipient of many awards and member of many professional organizations, he has also been involved in university administration, not only within astronomy, and founded a consulting firm for statistics. This is his second book. He has appeared in these pages as the speaker at an RAS meeting (with the written version of his talk in the *Magazine*¹), review author of conference proceedings on astrostatistics², author of an unusual book described in an unusual review³ by one of the usual reviewers, and medal recipient⁴.

This book is about how astronomy has influenced the cultural history of humanity, starting off with influences on the author, then covering how the night sky has become less important with time for most people, thoughts on life on a planet with no stars visible, early humans, clocks, navigation, the scientific revolution and its wider ramifications (in particular a good overview of various statistical measures; many mathematical innovations were made by astronomers), and astrology, before concluding with a chapter on the future.*

*That last chapter is similar to, but better than, the last chapters in two other books I've reviewed here^{5–8}.