The Alan Turing Year Leaves a Rich Legacy

A year-long celebration of the life and work of a man whom many call the founding father of computer science.

The 2012 Alan Turing Year celebrating the life and work of the man many call the founding father of computer science was a triumph. Around the world, it brought together academics developing Turing’s uncompleted work, inspired school students with early visions of computing, and reached out to the wider public with a vast array of events that brought the character and achievements of the quiet genius to life.

The year highlighted not only Turing’s practical success, particularly his part in cracking German Enigma codes at Bletchley Park during the Second World War, but also brought to focus some of the concepts he conceived across disciplines, including mathematics, computer science, information, morphogenesis, and philosophy. Barry Cooper, a professor in the School of Mathematics at the University of Leeds and chair of the Turing Centenary Advisory Committee, started to encourage colleagues to contribute to the Turing Year five years before it began on January 1, 2012. He went on to coordinate the year’s activities.

One of these was the Turing Centenary Conference held at Cambridge University in June 2012 and entitled “Computability in Europe (CIE) 2012 — How the World Computes.” Cooper explains, “The mission of this event was to address concerns about how science was fragmenting. We wanted to return to more joined-up thinking about computability and how it affects our life.”

“More generally, too, the Turing Year was important in highlighting the need for fundamental thinking. Looking back, the year was amazing. It included more events than we had expected. It brought forward consideration of extended forms of computation, and it opened a window on things that many people find difficult to understand.”

Leslie Valiant, professor of Computer Science and Applied Mathematics at Harvard University, and the 2010 ACM A.M. Turing Award recipient, spoke at several Turing Year events. He suggests the centenary events were a culmination of a growing realization among scientists of the importance of Turing’s work, rather than a rediscovery of his brilliance. He explains, “Turing may be a newly recognized celebrity, but this is not necessarily the result of the centenary celebrations, as his influence on the world has become self-evident over the past decade in a way that it was not evident 20 to 30 years earlier. The Turing Year may have enhanced recognition of Turing’s work by bringing together many scientists who did not know individually just how many others also traced their work to Turing’s ideas. It also helped many realize just how sweeping Turing’s influence has become.”

The breadth of Turing’s thinking and the observations he did not go on to develop, but which now have great meaning in the world, are part of what made Turing a unique and remarkable man. At the same time, however, the complexity of his thinking and the difficulty in explaining to the layman the concepts he proposed, have helped deny Turing the public recognition given to other great scientists such as Charles Darwin, Isaac Newton, and Albert Einstein.

This is disappointing to scientists following in his footsteps, although they do acknowledge that the Turing Year was successful in raising Turing’s profile to a limited extent. Christos Papadimitriou, a Lester H. He Barney Professor of Computer Science at the University of California, Berkeley, says, “One outcome of the centenary celebrations is that Turing is a little more in the public mind; I see fewer blank faces when I mention his name. This is a good thing, as Turing is my hero. His opus is nothing short of brilliant and he has made more impact than anybody else. He has changed the world in ways that many did not, and he matches Darwin in terms of raw, unadorned, original thinking in the face of an intellectual community with opposing thoughts. Darwin, Newton and Einstein are giants, but so is Turing, and I hope we will gain a profile like them.”

In discussing Turing’s accomplishments and the celebration of his birth in London on June 23, 1912, it is impossible to disregard the U.K. government’s proposal to pardon Turing posthumously for his criminal conviction for homosexuality in 1952, which is believed to have contributed to his suicide two years later. For many of those involved in the Turing Year, this and subsequent media coverage have been a distraction and lamentable note in the proceedings, although they have, ironically, served well in raising the profile of the man in the scientific spotlight. While many agree that Turing was hurt by the humiliation of the conviction and would, in his quiet way, have appreciated a pardon, the main concern is that a pardon and its media coverage should not be the lasting legacy of Turing and the Turing Year.

With legislation expected to be in place to support a pardon either at the end of this year or early next year, and the 2013 Turing Year spilling into 2013 and beyond, a larger legacy is described by Cooper. “The future is not computable, so we can’t see what will happen, but the Turing Year has increased interest in basic issues of computability and engaged people who didn’t previously know much about the Turing. One spin-off is that as Turing becomes better known, people will look at the context of his work and begin to discover others with an early interest in computing, such as John von Neumann.”

Cooper also suggests the Turing Year could encourage more computer scientists and mathematicians to write for a wider public audience, while Papadimitriou hopes the year will spark greater interest in computer science education and research.

As the year’s activities come to a conclusion, the legacy of the Turing Year includes a number of artifacts, some of which, such as the DVD of Colddrink (an award-winning documentary film on Turing’s life), will serve to keep him in the public eye, while others, such as Cooper and Jan van Leeuwen’s book entitled Alan Turing: His Work and Impact, will help sustain scientific interest in his achievements for many years to come.

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