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President's Column

Emina Soljanin

Spring for me got to mean awards time. That is because for many years now, I spend a substantial amount of my “free” Spring time sitting in or chairing various awards committees of the Information Theory Society (ex officio), and at the IEEE level. The work includes reading nominations, endorsement letters, dissertations, and papers, as well as organizing, leading, or participating in meetings where the winners get selected. Each year, I get newly impressed by the apparently increasing creativity and hard work of nominated teams and individuals. This year, I am looking forward to congratulate many winners in person at the ISIT award ceremony, as they get handed over their well deserved plaques. Just thinking about that makes me feel proud and happy to be a part of our scientific community, and this year, that gives me a solace as well. And yet, like the physicist David Mermin did many years ago, I ask myself whether *the system of prizes, honors, and awards has run completely amok, absorbing far too much of the time and energy of the community in proportion to the benefits conferred* [1].



Spring is also the time when many of us receive reviews for the papers we submitted to conferences with winter-time deadlines, such as our own ISIT, as well as, not exactly ours (yet), ICML, PODC, SIGMETRICS. Upon reading the reviews, we often get happy, but more often, we get disappointed. And as I try to listen, with forbearance, to my colleagues and students, I observe how their reactions get unevenly polarized into anger and disillusionment on one side and euphoria and approval on the other. But the reality, as always, exists in between or (depending on whether you have classical or quantum upbringing) as a superposition of the two extremes. For my colleagues, I know that *this too shall pass*. But for my students, I ask myself whether I imparted on them (what my father read to me a half a century ago on a different continent [2]) that science is the Red Queen Race and that, if you venture into someone else's land, then *it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!*

But, are there really our and their lands in science (and in life)? Is there really a place where one truly belongs? As I was pondering this question, the sad news about the passing of Elwyn Berlekamp reached me, and in that instant, I knew the answer. If you have taken a coding theory class, you know who Elwyn Berlekamp was. You can read a few formal words about him in this issue and on the web, and I hope, much more later this year in the newsletter and elsewhere. I will here tell you something personal.

Berlekamp's was the first Shannon Lecture I attended. It was at the ISIT in San Antonio in 1993, where I worked as a student helper but did not have an ISIT paper yet, and, no wonder, that will forever stay in my mind. But what I remember even more clearly is a conversation with him at the ITW in Svalbard in 1997. I was working at Bell Labs then, in the department called *Mathematics of Communications* whose internal number was 11217. Berlekamp told me he did his time at Bell Labs too, in the department whose number was n and $2^n - 1$ was the largest known Mersenne prime then. Just a few years ago, he called me in connection with the 2016 Shannon centennial celebration at Bell Labs. He told me he had been invited to participate in the program, but worried that the place had changed, and perhaps, it would not even matter to anyone that someone like him was there. I reassured him that his presence would mean a lot in different ways to very many people at different (personal and professional) levels.

Over the years, I saw Elwyn Berlekamp several times, mostly at various Berkeley institutions, participating at both engineering and math events, always well received by many different groups and individuals. Berlekamp was a giant of Coding Theory. Or was that Mathematics? Or Economics? Perhaps he was 30% a Coding Theorist, and 45% a Mathematician, and 25% an Economist. As these numbers were popping up in my head, I remembered the words of the journalist Amin Maalouf

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In Memoriam: Elwyn Berlekamp (1940–2019)

Emina Soljanin and Alexander Barg

Shannon Award winner Elwyn Berlekamp passed away on April 9, 2019 at the age of 78.

Elwyn Ralph Berlekamp (September 6, 1940–April 9, 2019) was the 1993 Shannon Lecturer known for his work in coding theory and other disciplines. He was a professor emeritus of mathematics and EECS at the University of California, Berkeley. Berlekamp was co-inventor of the Berlekamp–Welch algorithm and the Berlekamp–Massey algorithms, which are used for efficient decoding of Reed–Solomon codes. He was also known for using information theory in money management.



Elwyn Berlekamp also discovered an algorithm for factoring polynomials over finite fields, which is included in computer algebra systems such as Pari. He wrote a classic 1968 monograph on Algebraic Coding Theory, which is still in use, as well as a well-known two-volume set “Winning Ways for Your Mathematical Plays” (with John H. Conway and Richard Guy).

Read Elwyn’s obituary at *Berkeley News and Wall Street Journal*.

President’s Column *(continued from page 1)*

[3]: *The identity cannot be compartmentalized; it cannot be split in halves or thirds, nor have any clearly defined set of boundaries. I do not have several identities, I only have one, made of all the elements that have shaped its unique proportions.*

You can reach me at emina.soljanin@rutgers.edu, but I will respond to your message only if you tell me the solution for the n above. Here is another hint. Berlekamp, actually told me his Bell Labs department name and number, but I still wanted to check, and I found out that when he moved to Berkely, the world had a new largest Mersenne prime.

References

- [1] D. Mermin, “What’s Wrong With These Prizes?” *Physics Today* 42, 1, 9 (1989).
- [2] L. Carroll. *Through the Looking-Glass and What Alice Found There*, Chapter 2.
- [3] A. Maalouf. *In the Name of Identity: Violence and the Need to Belong*, Introduction.

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