IEEE Information Theory Society Newsletter

President's Column

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The International Symposium on Information Theory (ISIT), our Society's flagship conference, took place a few weeks ago in Paris. It was there, in *la ville-lumière*, that many of us were able to discern some light at the end of the tunnel we felt we entered more than a year ago. But some have told me that they did not think we got completely out of the (Vail) woods yet. I am now at home, looking at the skyline of Manhattan, *the city that never sleeps*, and reflecting back on the ISIT and the time from the beginning of the year.

The ISIT was a great success by all measures. (Alright, I know, many would use different words for the banquet, and I will come back to that.) We had a record number of attendees and a very exciting plenary and regular program. We had five special sessions on information theory and related fields, as a part of this year's new initiative I wrote about in the March issue. The membership events were, as always, well attended and well received. We had a superb Shannon lecture, delivered flawlessly by Erdal Arıkan followed by a very lively discussion.

The annual Society's awards, listed later in this issue, were presented at the ISIT award ceremony. Our small Society (by the IEEE membership measure), as usual, received a disproportionately large number of IEEE level recognitions. This year, we were honored to have the IEEE President José Moura present some of these awards to our members.

The 2020 Shannon Award, our Society's most prestigious recognition, went to Charles Bennett, a researcher at IBM, New York. As nicely stated by Andreas Winter, one of Bennett's collaborators, *Charles Bennett has been instrumental in the creation of modern quantum information from the 1980s. Even if he didn't create the new information science on his own, Charlie had his hand in every fundamental conceptual breakthrough, and they all show his signature thinking about information, which is informed by his interest in the physical representation of information and by his unique way of looking at information theory as a physical theory.*

You may think that quantum information theory is an exotic area, and at most an esoteric subfield of information theory. Nevertheless, it is classical information theory that is a special (non-contextual) case of quantum information theory. You may want to check with Google in which class of papers the term "information theory" is used the most often nowadays. You may be surprised. It has been alleged that the mathematician David Hilbert had said that *physics is too important to be left to the physicists* to which the physicist John Wheeler, several decades later in retaliation, responded that *Gödel is too important to be left to the mathematicians* [1]. Today, I dare say, they would both agree that information theory is too important to be left to the information theorists. And so would many contemporary physicists, mathematicians, and computer scientists.

Now back to the banquet. I was disappointed too. I had a little speech, which could not be heard because of the acoustics in the space. I had prepared jokes and hints to help the audience guess the 2020 Shannon award winner's identity, which I did not have a chance to say. But, what I was truly sorry about was the lost opportunity for our society members to *sit* together and enjoy a well deserved rest and food. That would have provided a further chance for our Society to heal.

Yet, I realize how much work it takes to organize an ISIT. So much so that I never ventured into serving as a general chair to one, in spite of having extensive experience in organizing smaller workshops. I would like to once again thank the entire organizing committee of the ISIT'19. I hope they are proud of their work and accomplishments, and if they are not, I hope they do not feel too bad about that. I also would like to remind our members that this technical society is run by elected volunteers, rather than hired experts or career politicians. We all strive to do our best on a

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daily basis in areas which often require different kind of expertise than engineers usually posses.

Some other Society's members were also extremely busy in the months leading to the ISIT in Paris. We started this year with remarkably many new members at the key positions in the Society's governance, and that meant lot of learning, consulting with each other and with our predecessors, exchanging long and frequent e-mails. We got three new officers (ordinarily, there is only one), Frank Kschischang, Aylin Yener, and Wei Yu. We got a new Society's secretary, Lara Dolecek, a new conference committee chair, Vijay Kumar, a new online committee chair, Brian Kurkoski, a new external nominations committee chair, Dan Costello, a new thesis award committee chair, Christina Fragouli, a new young scholar award committee chair, Tom Fuja, a new fellows committee chair, Antonia Tulino, and new WITHITS chairs, Gireeja Ranade and Christina Lee Yu. Even people in their second year of service, like the Society's treasurer Aaron Wagner and the Newsletter editor, Salim El Rouyaheb, had entirely new types of challenges to deal with. I would like to wholeheartedly thank them all for stepping up to their respective roles when the Society needed them the most.

Most of these new appointments were made by the diligent 2018 Nominations and Appointments Committee, chaired by Alon Oriltsky. Thank you Alon and the committee. As if he did not deserve some time off after his long service to the Society, Alon continues to lead the activities related to the Shannon documentary *The Bit Player*. The movie premiered at the World Science Festival in New York City in May, and had four other screenings: at IBM, Yorktown Heights, in June, at the World Congress of Science Journalists in Lausanne and CineGlobe Festival at CERN, Geneva, in July, and at the Computer History Museum in Cupertino in August. All shows were extremely successful. You will hear about that in the next issue. For now, I recommend reading the recent review in Physics Today [2]. Yes, the physicists, again.

By the time this issue of the IT Newsletter reaches you, the IEEE annual elections will be in full swing. Please vote. Our Society is managed by the Board of Governors, and each year, one-third of the BoG gets replaced by new elected members. Please vote, and then, regardless of whether you like the outcome or not, put a serious effort to make our Society better for you and your colleagues, because leading our technical field and our technical community is too important to be left to the elected few. Is that too much to ask?

Each time there is an election of any kind, I think about the first US general elections I voted in. The year was 2004, and as usual, many were happy with the outcome and many got disappointed. The late Toni Morrison (the recipient of the 1993 Nobel Prize for literature) was among the latter. She was depressed, but eventually, inspired by a conversation with a friend, she wrote the following [3]: *This is precisely the time when artists go to work. There is no time for despair, no place for self-pity, no need for silence, no room for fear. We speak, we write, we do language. That is how civilizations heal. I know the world is bruised and bleeding, and though it is important not to ignore its pain, it is also critical to refuse to succumb to its malevolence. Like failure, chaos contains information that can lead to knowledge – even wisdom. Like art.*

References

[1] Hilbert may have said *too hard*. Many human activities (including war, by Clemenceau) are said to be too important to be left to those seemingly in charge.

[2] Toni Feder, "Review: The Bit Player, an Homage to Claude Shannon," *Physics Today*, July 2019.

[3] Toni Morrison, "No Place for Self-Pity, No Room for Fear," *The Nation, 150th Anniversary Special Issue*, April 2015.