

# THE THEORY BLOGS COLUMN

BY

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In this issue, Omer Reingold talks about his experience starting not just one, not even two, but three group blogs on theoretical computer science.

Omer is well-known for his prize-winning research on the foundations of cryptography, on computational complexity, on combinatorics, and on fairness in artificial intelligence, but he is also an extremely caring and thoughtful mentor. He has been thinking for a long time about what makes a research environment welcoming and supportive for young researchers, and about how to foster such an environment.

In his guest column, Omer tells us about his experiences with theory blogs, including his “research life stories” project.

# BRINGING RESEARCH-LIFE TO CENTERSTAGE

Omer Reingold

Like many in our community, I learn a lot from theory blogs. But earlier in my career I couldn't imagine that I will become a blogger myself. Planning aside, by now, I have founded and managed three research blogs – “Windows on Theory” in Microsoft Research Silicon Valley, “Theory Dish” in Stanford's theory group and recently “TOC 4 Fairness” as part of Simons Foundation's collaboration on Algorithmic Fairness. So, what changed? The first reason for which I thought I couldn't blog is that I didn't perceive myself as being enough of an exhibitionist to be a blogger. Turns out that this is much less of a problem than I'd like to think. In fact, with age, I am even more excited to talk about, hmmm, myself (so thank you Luca for this excellent opportunity). In addition, I always saw the value of blogs for the communication of ideas within a discipline and as a powerful tool for popularizing science. But I also always felt that I am too busy, that I write too slowly and that I will have enough time to focus on popular writing once I get tired of research. What convinced me to take the plunge is the wonderful theory group that existed in Microsoft Research Silicon Valley and whose brilliance I wanted to share with the theory community at large. It's not a coincidence that my final blog post on “Windows on Theory,” before living the blog in Boaz Barak's most capable hands<sup>1</sup> was titled “A Social Blogger.” Blogging for me is something to do with a community and for a community.

## Science and Scientists

The group blogs that I formed contain a mix of scientific and meta-scientific posts. At any given point, I (as many others, I am sure) have several scientific insights that I'd like to share with the community more directly than in research papers. At times I enjoyed posting about these insights<sup>2</sup> but, unfortunately, to many of those I will never get (a thinly stretched professor and a slow writer, remember?) I do have a better track record in convincing others to blog about science. In particular, the theory group at Stanford now allows blog-writing to be a possible outcome of our quals (in addition to an oral presentation). We believe that this could be an excellent capability for our students to develop and a good scientific service.

The posts I find more time to write are meta-scientific. How should our conferences operate?<sup>3</sup> How to run a successful program committee?<sup>4</sup> How obsessing on the shortcomings

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<sup>1</sup>I always considered the recruiting of Boaz to be my most important contribution to TOC blogs.

<sup>2</sup>A few of my favorite posts on that front are: “Occupy Database – Privacy is a Social Choice,” “Rigged Lottery, Bible Codes, and Spinning Globes: What Would Kolmogorov Say?” “Advanced Studies in Estate Management: He Who Was Married to Three Women,” and discussions of other's research in celebration of their awards as in “2012 Turing to Goldwasser and Micali.”

<sup>3</sup>In various Windows on Theory and Theory Dish posts including “FOCS/STOC: Protect the Venue, Reform the Meeting,” with Boaz, suggesting a reform of our flagship conferences, “Can We Get Serious?,” which criticizes the chosen path as well as others on page limits and anonymous submissions.

<sup>4</sup>For example, in my Windows on Theory posts “Some Reflections on the FOCS PC Work”

of the community may obscure its incredible successes.<sup>5</sup> The relationship of research with industry and society at large.<sup>6</sup> Scientific communication in relation to literature.<sup>7</sup> And also various exciting announcements.<sup>8</sup> At times, I felt like my voice had some positive impact on the community. At times I felt like the dog that barks while the caravan moves on. At times, I shared the stage with others with whom I disagreed. One way or another, I believe that throughout my career, I got (and am still getting) more than a fair share of influence on the TOC community that I love so much. I feel good about letting others take the lead.

If the previous two categories of posts are ones that I will likely continue contributing to on occasion, there is a third category that I am really passionate about. This category is not about the content of our science and not focused on the management and politics of science (but is often connected). The discussion I would like to promote in our blogs, in our conferences, in our universities and every other place where we “exist” is about the human aspect of doing research. Every social and emotional issue we often expect our community members to deal with “in their own time” or in their own personal support systems. I wholeheartedly believe that all of these should be explicit in our discussions, as science cannot be separated from the scientists, who are, at least for now, human. I also believe that the training of scientists should cover relevant social and psychological topics that could assist us in our own careers and when we mentor others. Uri Alon, a Weizmann professor of Biology, a friend, and one of my sources of inspiration in this quest, contrasted the significant amount of training one gets to optimize the usage of a fancy piece of equipment purchased for the lab with the absence of training to optimize the conditions for success of a student or a postdoc one mentors.

## The Research-Life Stories Project

My first post ever, titled “Labor of Love,” was a sign of what’s to come. It talked about the different motivations that may lead to a research career and how they can change over time. But the project that expressed my conviction more than all was the research-life stories project in *Windows on Theory* (and to some extent also a career-advice project in *Theory Dish*). The call for stories was simple:

“Please share with us events you remember from your research life.”

The focus on stories was influenced by my experiences with a form of theater known as playback theater (which seems to be quite popular amongst theoretical computer scientists). The simple phrasing of the question was influenced by some studies in the field of education and was meant to not impose my preconceptions of what are the big issues that face people in their research careers. I encourage the readers to pause and think for themselves which events they would share if asked this question by a friend. And I’d like to emphatically assert that whether you are making your first steps in research or you are already retired, you have meaningful and important stories to share.

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<sup>5</sup>In my *Theory Dish* post titled “TOC: a Personal Perspective (2021).”

<sup>6</sup>In my *Theory Dish* posts titled “The Research that Would Frustrate the Facebooks,” “Pride and Prejudice: From Research to Practice” and “The ‘Technologists’ and Society.”

<sup>7</sup>In my *Theory Dish* post titled “What’s Your Story?”

<sup>8</sup>Like my *Theory Dish* post titled “TOC for Society” announcing the creation of FORC.

The project was very rewarding and I got many stories from people I admire about many chapters of their career (and wrote some myself). But I know that there are numerous additional stories to learn from and I am committed to uncover some more of them. For example, one segment that I didn't get enough stories from were people in the later stages of their careers. I believe that these stories could be extremely valuable for people in middle stages who experience a set of challenges that are not often talked about.

## Shared and Unique Experiences

One of the major hope for the research-life stories project (fulfilled to a significant extent) was that it will expose to researchers in the beginning of their careers (for example, students) that the challenges that they are struggling with have been shared by many others in the community, including people that became very successful. Realizing that you are not alone with your experiences and that they don't say anything negative about you could be a very powerful experience. It can relieve some of the fundamental loneliness we sometimes experience. Quoting from the same post I then said:

“A research career is different from most other jobs in its characteristic and challenges: Long period of education and training which is packed with uncertainty (Am I good enough? Will all this effort be rewarded by a suitable position in a suitable location to live in?), the tension between collaboration and competition, preserving creativity and relevance along the decades. To all of these and more, we should add that our community is so dispersed. Our collaborators, our audience, our points of reference, are not only the colleagues next door but probably more so our colleagues across the globe.”

Of course, we are also all unique and our experiences are unique. Our upbringing, the different parts of our identity, our family conditions, our medical and psychological conditions and more are all affecting the reality and perception of our research life (as well as every other aspect of our life). Still, with all of our uniqueness, it can be comforting to know that in some ways we are also the same.

Of special importance is acknowledging that some groups of individuals within our community have another major layer in their research-life experience. Since our ability to understand the other is limited by our own experience, it is important to give room and directly listen to members of under-represented groups. In this respect, I want to acknowledge that one of the inspirations for the research-life stories project was Luca Trevisan's Turing Centennial posts in his blog “In Theory.” In a tribute to Turing's life, Luca invited a sequence of inspiring posts from LGBTQ colleagues.

As for me, I cannot say that I have done enough but I never regretted anything I did to highlight or facilitate the voices that are not always well represented. Possibly, my most consistent effort (far from sufficient but still) was with respect to sexual misconduct. Among the relevant posts, perhaps the one I cherish the most is the Windows on Theory post titled “On intellectual passion and its unfortunate confusion with sexual passion (and how it may relate to issues of gender).” This is a translation from Hebrew by Oded Goldreich of (parts of) a post by an anonymous female graduate student in Humanities. I found it illuminating, especially in comparison with the discourse back in 2013, which was often less subtle. It demonstrate how basic freedoms and experiences that some of us get to take for granted are

often denied from some of our colleagues. If you want to read one of the posts I mentioned here, perhaps this should be it.

## **What's next?**

I have spent enough time in California, and listened enough times to Yusuf Islam (when he was still known as Cat Stevens) singing "but I might die tonight," to know that there is no "next" just "now." Well, change can start *now*. We can be aware of the "life" in our own research-life and attend to it now. We can foster discussions of the human aspects of research in meetings, in blogs, in courses<sup>9</sup>, and in small steps that can happen now in the small corners of our research world or on the bigger stages that are sometimes offered to us.

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<sup>9</sup>My Stanford course "The Practice of Theory Research" is an attempt in this direction.