

Technion Honorary Doctorate Ceremony, June 12, 2023

Dear board members, Technion leaders, and esteemed guests,

I was asked to say a few words to you tonight, on behalf of all recipients. It is hard to speak for other people, especially if you don't know them. But I am certain that like me, they are extremely honored to receive this honorary doctorate from the Technion. Otherwise, my statement is personal. I plan to talk about my many connections to the Technion, the state of Israel's higher education, and finally, very briefly, on my research area.

Let me start by thanking the many people on whom my research career depended: my wonderful family, my teachers and mentors, my students, postdocs and colleagues, and of course the academic institutions in which I spent time.

My connections with the Technion are deep and numerous, which makes this event particularly moving for me.

First, the Technion is my alma mater – I have spent my formative years in this fantastic academic institution, which has inspired me and prepared me for my academic career. The computer science department was of course very small in the late 70s – we were a class of 40, but of an amazing quality. Many from this undergraduate class became leading academics, and some are close colleagues of mine. I also had

excellent teachers, among whom I would like to highlight the late Shimon Even, who I consider my first mentor in research.

A second fundamental connection is that it was here that I met my future wife Edna (it is her alma mater as well, a math major), in a class (on solving riddles -- yes, academic freedom allows this -- taught by Meir Kachalski) which we both attended in the Fall of 1980. It was here we fell in love, decided to get married, and had our wedding in May 1980 at the Technion synagogue, a few steps from here. Calculation shows we are entering our 44th year of a wonderful life together, which started here.

The third fundamental connection is through Edna's parents. Her late father, Wolfgang Rothenstein, was a faculty member at the department of nuclear engineering from 1960-1991, and then an active emeritus professor until his death in 2003. Wolfgang and his wife Miryam (happily present here today) considered the Technion their home, often dined at the faculty club and attended many events, and had many friends and colleagues here.

Finally, quite a number of my and Edna's family members, who I will not list, count among the numerous who have received a great education here at the Technion.

Israeli universities, and the Technion in particular, have been a beacon of excellence for decades, in the education they provide, the research they generate, and the human power

they prepare to lead Israel's growth in science and technology, and thus also to Israel's economy and security. The foundation for such success are the important principles guiding it: the pursuit of knowledge and truth through inspection and reason, complete freedom of expression and discussion of ideas, openness, inclusivity and collaboration, with academia and society, locally and internationally.

This foundation must be maintained and strengthened for such success to continue. Unfortunately, there are at present enormous threats this foundation, and thus to the survival and thriving of Israeli higher education (among many other essential segments of society). While this event is a celebration, I cannot avoid discussing these dangers. Nothing I'll say here is particularly original, but this is what I see and how feel, and I mainly feel fear! Like numerous others, I have been watching in horror the plans and activities of the current government, which in my view lead to dismantling the very foundations which have helped make Israel what it is today - democratic institutions, human rights, public service, quality education, rule of law and many more. While we have been on a slippery slope for a while, it seems to me that in the few months we have been moving in a free-fall from a cliff into possible self-destruction.

With an openly declared agenda, current government ministers, granted with enormous powers and responsibility, put forward fascist, racist, homophobic, misogynistic, and authoritarian ideas and policies. They are already beginning to

change the rules so as to control all branches of government, remove checks and balances, suppress human rights organizations, and they use brutal, violence inciting rhetoric towards anyone with different opinions. All these are reminiscent of dark regimes in Hungary, Poland, Belarus, Iran, and indeed, the early years of Nazi Germany. Such actions and plans are bound to lead to a tyranny of the majority, to ignoring minority rights, to established corruption, and to the squashing of the productive segments of society while supporting an ever growing ignorant, racist and violent population.

In particular, the consequences of controlling free speech and curricula in educational institutions, political control of academic funding and the expected and observed drastic cut of foreign investments in Israeli science and technology can be devastating. They are destined to destroy the academic excellence we have been so proud of, and undermine its future as a source of innovation, revenue, strength and security.

Israeli citizens in huge numbers have reacted against this brewing nightmare with inspiring energy, stamina, bravery and determination. I expect that this will be a long and difficult struggle, and I believe that all parts of society, in particular academia, must continue to fight these dark tendencies!

I would hate to end on such a grim note, so let me tell you a few words about my research area and community. I fell in love with Theory of Computation at the Technion, and have been continuously passionate about it since then. Briefly, it

deals with rigorously modeling computational processes and understanding their power and limitations (namely finding efficient algorithms of solving important problems, or proving that no such methods exist). This task turned out to be an extremely deep, broad and evolving challenge, leading to a beautiful theory, with remarkable intellectual and technological implications. Indeed, the theory developed so far was essential to the amazing computer technology and digital world that we all depend on and are familiar with.

But this is only part of the story -- as already observed by Turing and von Neumann, among other pioneers, computational processes take place not only inside and between computers, but actually in every evolution we know of, be it natural or man-made: biological, chemical, physical, economic, neural,... All of them may be viewed as computational -- the only differences are in what are the basic operations underlying them, and what are the essential resources expended in each such process. Thus, the theory developed by our community has also shed light on research in all sciences. Indeed, interactions with all sciences continuously grow in volume and importance!

For me personally this has been an exhilarating ride: for over 40 years I have been frequently excited by ingenious ideas and results, and by the quality of young researchers who are continuously attracted to this field. Moreover, ours is an extremely collaborative and friendly community; indeed, many of my students and colleagues became life-long friends. I feel

blessed and privileged to be part of this wonderful environment, which was an essential part of my growth, achievements and distinctions, and thus feel that they all share this honor with me today.