The Ivory Lighthouse

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In the spirit of full disclosure, please allow me to begin by stating that I am not a historian, I am not a social scientist and I am not a professional academic in the field of comparative higher education. Everything I will say will therefore be devoid of any intrinsic formal academic value. I am not saying it cynically. I am speaking only as someone who is familiar with the higher education system from the point of view of a decision maker. In my remarks, I do not want to look back. I prefer to look mainly at the future. Given that I am not occupying now any important administrative position, I am allowed to say whatever I wish without committing any organization. This is a great privilege, which you don't have when you run a large institution.

In these remarks, I will try to outline my own personal view of a desirable university system, not only for Israel but also for any other advanced country. My preferred model has a clear resemblance to certain aspects of the American system. There are certain parts of the Israeli system that behave precisely in this way, but I would like to try to integrate it into a picture which is really suitable for the future, because there will be, as you will see, certain elements which are not yet really recognized by everybody.

I chose to call this presentation "The Ivory Lighthouse" for reasons that will become clear in a few minutes. But please allow me start by going back in time, for a few minutes. My grandfather Haim Harari went approximately 100 years ago from Tel-Aviv to Paris in order to study towards a Ph.D. degree in literature at the Sorbonne. He never wrote any letters to me and he died before I was born. However, if we could design a time-machine, which would induce him to write me a letter from the Sorbonne, one hundred years ago, he would have probably written something like this:

“A University is a remote isolated **ivory tower**, in which distinguished aging scholars, mostly with beards, contemplate philosophical and ethical issues, probe the most **esoteric deep secrets** of nature and train the next generation of selected brilliant minds **to do likewise**. The general public **knows little and cares less** about this secluded place, but admires the intellect of the Professors, understanding that they are a minor burden on the society which maintains them, similar to artists and to other **useless great minds**. The University has **no relation** to the business world, to industry, to government, to the pre-collegiate educational system or, for that matter, **to anything else practical**."

I believe that this is a fair description of the real ivory tower of the original elite university.

Today, somewhere in Europe, a student might write a different letter:

A University is **a huge processing plant**, in which the raw material consists of a large percentage of the population in the relevant age group and the final product is mediocre **practitioners of useful professions** like law, physical therapy, accounting, software engineering, school teaching and dentistry. Most students are of average intelligence, admissions are open or almost so, **tuition is free** or almost so and the average Professor is far from being an admired legendary scholar. **Quantity is achieved** at the expense of quality. **The cost to the public is substantial** and the **politicians constantly meddle** in the affairs of the University and try to make sure that every penny spent leads to **immediate practical results**. The relation to the business world, to industry and to the pre-collegiate school system is still, at best, marginal."

Now, it is very clear that in the 21st century we don't want to have an academic system which fits either the century old description, or the contemporary description. The question is whether one day we can have, instead of an ivory tower, an ivory lighthouse shining in all directions, such that:

"A University is an **ivory tower**, devoted to **creating new knowledge** and to training an intellectual **elite**, while serving, at the same time, as a true **lighthouse**, training competent professionals, spreading enlightenment, **contributing to the economy**, helping school education, creating the foundation of sophisticated industry and **ameliorating social problems**."

That is a tall order. However, only if we can move towards fulfilling all or most of these goals, we can approach a university system which has both the elite quality and the social function feature, and which is accepted, appreciated, and perhaps even admired by the public, the politicians and the government.

Before we even begin to discuss these issues, there is one thing that we, in the academic world, must say to ourselves. We must eliminate several sacred cows, which are harming our cause. The academic world excels in demanding larger budgets, in resenting political interference and in blaming the public. We may very well be right in all of these, but we are not very good in blaming ourselves for certain things. No fair discussion should proceed without starting from these “sacred cows”, which are moving freely in our campuses and which should be eliminated.

First: **Creativity is not the same as the license to publish nonsense**. There is an enormous amount of intellectual garbage being published by the academic world. This is not the same as creativity. Creativity is the leading engine of research, but we are not always up to the required standards, even in some of the better Universities. The "publish or perish" syndrome produces too much quasi-research which is neither profound nor useful.

Second: **Academic freedom is not the freedom to spend money**. We always talk about academic freedom and rightfully so, and we should fight for it without any compromises. But it does not follow from this that we should have the freedom to spend unlimited amounts of money, just because we feel like studying some totally absurd issue, requiring huge resources. There must be a certain balance here and we should adhere to it very carefully.

Third: **Contributing to social and economic problems is not underneath the dignity of the great scholars.** The academic system, everywhere, does not exhibit enough efforts of distinguished scientists and distinguished scholars, who contribute, in addition to their research and teaching, to social and economic problems, not necessarily only in their own professional fields. Please do not tell me that physicists cannot contribute to school education and don't tell me that other academics cannot contribute to numerous other social issues. Nothing would advance the image of the universities in the eyes of the public more than such an involvement in social problems.

Fourth: **Tenure is not retirement at the age of forty**. There is too much of that, and we all know it, and we are not fighting against it. I am not suggesting here to abolish the tenure system. Without the tenure system there is no academic freedom. But we should be very careful in what we are doing. We should be more careful about who gets tenure, when one can get tenure and how many people get tenure. Carelessness on this issue may lead to all sorts of unwanted avenues.

Fifth: **Excellence is not arrogance**. The academic system displays too much arrogance towards the political system, mainly based on the fact that the arrogant person happens to be an excellent scientist. It is not enough to be an excellent scientist. You also have to understand the pressures of the politicians.

And finally, an internal issue of our system: **Equality between scientific stars and mediocre practitioners is not the same as democracy.** It sounds like democracy. But it is not democracy; it is simply bad management of scientific institutions. In the same way that you can't give the same funding and an equal treatment to the world champion in the ten kilometer run and to somebody who jogs ten kilometers every few days, you should not treat the real scientific stars, which are few and far between, at the same level that you treat the other mediocre practitioners. Universities which are governed by their senates will tend to do precisely that, and that is a very important issue. Of course you make mistakes by supporting the stars, but without these mistakes you will not have achievements.

Now we have been talking about diversity for the last couple of days, but we have been mostly talking about diversity of institutions, and I would like to talk now about diversity of resources and diversity of tasks of the university. I firmly believe that a diversity of different academic institutions can come about only from the diversity of resources. We have heard here a great deal about the ills of the European university system. The single biggest problem of the European system is that it is almost entirely funded by government. If you are fully funded by government, you have no choice but to do what the government tells you. It almost follows that everything then becomes equal. We will return to this point in a minute.

So let us first talk about resources. A university with diversified sources of income may receive support from the following sources: (i) central government support; (ii) local funds provided by a regional government or municipal sources; (iii) tuition; (iv) philanthropic gifts; (v) income from an endowment, if the university is old enough and rich enough to have one; (vi) competitive research grants; (vii) income from intellectual property; (viii) miscellaneous other sources, including sale of services, income from property, etc.

The above eight classes of resources are very clearly divided into three, which are of an intrinsic egalitarian nature, and five which are definitely not egalitarian. It is the distinction between the two groups of resources, which allows for a diversity of institutions in the academic system.

The three egalitarian sources of support are the central government, local sources and tuition.

Government support which is based on numbers of students, number of graduates, number of different fields of research, different degrees awarded and all of this cannot, no matter how hard the government will try, it cannot be very differential. Even if the government succeeds in including quality in a clever way in the criteria, the best and the worst will be differentiated by relatively small amount.

It is against the nature of democracy, it is against the fact that the children of the politicians are spread among the different talents, like the rest of the population. There is no way that government support will be very different from egalitarian to different types of institution.

Local government represent regional interests and that is good, because that means that institutions in more remote places may have a better chance to get local support.

Tuition is definitely egalitarian and certainly in countries in which the government determines the tuition. The tuition in my opinion, it is absolutely crucial to have tuition. It is crucial to have uniform tuition. We'll come back to it in a minute.

The differentiating sources of income are of course philanthropy, which cannot be equal because everybody helps themselves, endowment likewise, research counts which are truly competitive and come both from local and international sources, interaction property that depends on the quality of research and on the management attitude of the institution, and extra functions that can come by having all sorts of adult-training industrial park, real-estate of the institutions which can be temporarily used for something else and so on and so forth.

The lines which are marked here with this green, these are the ones to which I want to come back for a minute or two each.

The primary tasks of the university, which were traditionally only teaching and research, must now include additional components. But even the traditional connection between university teaching and university research is not necessarily valid in the 21st century. Can you provide adequate university teaching without performing research? The traditional answer is negative. But the truth is that you can

definitely train professionals in many fields without performing any research. It is important to understand that this claim does not at all speak against the value of research in the same fields. Research in the fields of law, accounting, music or surgery is, of course, important. But it is perfectly possible to provide first class university teaching in these fields by experts who do not perform research, while pursuing their professional careers.

Of course basic research is a function of the University and applied research is partly the function of the University and the blurring boundaries between the two make this really one task. Social problems are already mentioned.

Interface with industry is extremely important and not practiced too widely in Europe, better in the United States. I must say in Israel the situation is almost as good as in the United States, but far from satisfactory, and then there should also be a much stronger integration with the rest of the educational system, from kinder-garden to the end of high-school, because it is the product of the bad system that goes to the university and it's the product of the University who are training the kids in that system, and then there are many other things we can think about.

The tasks are also, some of them are clear, educating scholars which is the classical goal of the university, although in the 21st century there is no need anymore to cover all the different areas because a university can offer programs which are 80% normal programs and 20% distant learning and things of that sort. It is not necessary anymore to have a professor in every important field in the university, something that was necessary only a few decades ago, and universities are not doing enough in that direction.

It is very important for universities in the 21st century to move into multidisciplinary programs in a very big way because there are hundreds of new professions that simply did not exist 10 years ago. Universities have to train administrators of environmental projects, they have to train experts in computerized accounting system, they have to train nurses who specialize in MRI or cat-scan machines. I mean all of these are totally interdisciplinary don't fall into any category that existed before, and are absolutely essential for the modern Universities.

Basic research, we will come back to in a minute, again it has the green line.

Applied research in the university should cover the entire road from “R” to “D”, and I don't know if you've noticed that there were roads that start with “R” and goes to “D”; it is that entire road that has to be covered of course less “D” and much more “R”, but there is a certain integration which is absolutely necessary for a first-class university.

And I will not dwell on the rest of it except to get into the point of the school system later.

So having listed all of these diversified sources of income and diversified tasks, I would like to spend the rest of my time on saying a few words on everyone of the lines that were emphasized, because I feel that in each one of them there is a certain

message that we can transmit, in some cases based on good Israeli experience, in some cases based on my own experience at the Weizmann Institute, but these are all items that I feel like sharing with you again as new aspects of the system.

So the first thing is tuition. It is morally and economically right to have tuition. I have no doubt about it. It is morally right because otherwise you're transferring income from the lower economic level of society to the higher ones. It is economically right because if you get something for free you don't appreciate it, and it's very important not to allow people to spend 10 years running after the BA or to have free education to older people who are bored and want to learn something, which is absolutely adorable but there is no reason to give it for free.

Should the tuition depend on the subject? Some people say that tuition should be the real cost of the different subject. This is of course crazy, because number 1, it will encourage everybody to study the so called "cheap" subjects, and second, with all the multidisciplinary subjects, it will be a total madhouse before anybody can figure out what cost what, so it's totally impractical and also economically bad, and therefore tuition should be the same for all students.

Should it depend on income? The student is an adult. It is perfectly legitimate for the student to decide that he or she refuses to be supported by his or her parents. The Israeli student is even older than the average student in Europe or the United States, due to the compulsory military service. I therefore believe that the tuition itself should not at all depend on the income of the student or of the student's family. We shall discuss in a minute how to deal with those students that are truly needy. The formula should therefore be very simple: there must be a tuition; it should be equal for all fields of study; it should be equal for all students; its level has to be the real actual per capita cost of the "cheapest" field of study, otherwise certain students will pay more than their studies cost, an unfair proposition.

So if you take the real cost of a law student or a humanities student, which are more or less the cheapest fields in terms of the cost of the university, that should be the tuition, in Israel it is about 12,000 Shekels per year, or in other currency approximately 2500 Euros or Dollars, which is not the same anymore, and I think that should be the general rule.

There is a magic formula that have been working very well in Israel, and I never understood why it is not adopted and maybe the next commission will adopt it. We have the wonderful tutoring project, mentoring project, in which already 30,000 students in Israel are acting as mentors and tutors to children from families of low socio economic background, and in return for working 4 hours a week, they receive a fellowship. Now if we declare that every student can receive half of the tuition by doing that, and half of the tuition by interest free-loan, which is returned a few years after he or she finished his/her studies, that means that every student can go through the entire university without paying one penny in cash, but that student has to take two obligations, the social obligations of the tutoring project and the economic obligation of returning the loan.

Experience shows that the vast majority of the students do not do it because their parents will pay for them, but that means that the decision is theirs, not the

university's. you don't have to set up a bureaucracy that decides who is rich and who is poor, and who has property and no income and who has income and no property, and all of this nonsense, and which student does not want to depend on his parents, and which student is already married with 2 children and the parents don't want to support him, and all of this.

So I think this simple formula is both economically profitable for the government, it is fair and it precludes from the university all sorts of people that come there to have a nice vacation.

A word about philanthropy and endowment. You see the beggar in the corner and I hope that you cannot read what he says: now I drew your attention to it. In any case, philanthropy is something which is widely exercised in Israel and in the United States and almost never in Europe. I honestly believe that European universities have no real good future until philanthropy will penetrate the public education system in Europe, because it is philanthropy that allows certain universities to do things that others can't do, and it is true the philanthropy depends on the talent of the fund raiser, but it first and foremost depends at the end of the day on the quality of the institution, because the modern philanthropy is usually a very shrewd business person, and the shrewd business person will give money only to a success story. They like to join the winners. When you do philanthropy for the poor and the hungry, the poorer and the hungrier you are, the more philanthropy you will get, but philanthropy to higher education and to research, they like to join the winner, and the better you are, the more you will get, and the more you will get, the better you will be. And that is a very important differentiated factor, it is a self-help element and certain institutions and all the private American universities are very heavily based on this.

There is a give and take in modern philanthropy. The integrity of the institution is absolutely essential. You have to deliver what you promise, you don't sell what you don't have and there is a lot of facilities and entities that you can "sell", so-to-speak, and really replace government funding in a very big way and be much less dependant on the politicians It is difficult, it is possible and the other thing you have to do is you must have the courage when life is very difficult from day to day, to raise money for your endowment, because the people that will come after you, and after them, and after, after them will all enjoy from the endowment.

The fact that Harvard University has a twenty billion dollar endowment is one of the main reasons why it is a first class university. This is not due to the current president of Harvard, to any one previous president or to any other individual. It is the result of a very long history, in which generations of leaders of the university understood that the long range future is important and should be given priority over many short term issues. When a younger university hears this, it might say: "We cannot compete because we are only starting now". My answer is: "If you are only starting now to build an endowment, you should double and triple your efforts, rather than be discouraged. It is not easy, it is not pleasant, but it is doable".

Once you have a created a respectable endowment fund, you must learn how to invest it. In this respect, the American universities are decades ahead of the European ones. There is an entire science, sometimes art, of developing a successful long range investment policy for a university endowment, taking calculated, but uncorrelated

risks and securing, in the long run, a significant average return. One of the secrets of the trade is to learn to think in terms of decades, not quarters and to protect the income of the university from the endowment, against the fluctuations of economic upturns and downturns. This is actually a fascinating subject by itself. I do not want to get into it but it is a crucial subject for the future of the 21st century elite universities, for which a strong endowment is a necessity.

Intellectual property is entirely different story. Everybody knows that the university makes discovery and creates knowledge, everybody knows that you can patent your knowledge in certain cases, and everybody knows that theoretically you can sell the patent and enjoy the royalties. In real life it is much more difficult, and unless the university decides that this is a major goal of the university, but it should not divert it from its basic research path. This sounds like a self-contradiction, but it can be done, it is doable and actually the better your basic research is, the better off you are in terms of creating intellectual property.

So you have to go through this tight rope, on this tight rope: on one hand you declare that you will not move one centimeter, or one inch, depending where you are, from the goals of the university, at the same time if you stumble on something by all mean exploit it and the only way to exploit it is if you create an apparatus which deals with it, if the apparatus is headed by scientists, if it is done at the level of the vice-president or somebody who reports directly to the chief executive of the institution, and if the institution fights with all the different economic entities to protect its intellectual property.

It is also very crucial, and in this aspects academia very often errs, it is very crucial to also fight against those faculty members that take the intellectual property of the Institution and run away with it somewhere else. And these are very difficult things to do, but if you do them, at the end of the day it is to the benefit of the faculty member, it is to the benefit of the institution, it is to the benefit of the higher education system, it is to the benefit of research, but you have to take a business approach to it. For instance, don't sell the patent when it is issued, even if some industry wants it; develop it still at the level of 50 or 100 or 200,000 dollars a year, which you can afford as a good scientific institution, and only then sell it, because with this little investment you are going to earn much more, and this does not take anything away from your scientific level. And one can talk for hours on this subject, but here I am in the happy position of not having to prove the case, because the little Weizmann Institute, which is definitely not as good as Stanford, and definitely not as good as Harvard, and definitely not as good as Princeton, is making more money on royalties per year than all three combined, not only on each one of them separately.

Now that is not a claim about our scientific excellence; we are pretty good scientifically, but we're not Princeton, we are not Harvard, we are not Stanford and we are not anywhere near them, let us have no illusions, but by pursuing such a policy without moving away from being an institute of basic research, we can do it, and I believe that the future is that scientific research will depend very much on this, and as soon as universities learn how to do it, it is going to happen.

Basic research, it is very important, and this is not happening in Europe. The research group should be like a start-up company, not in the sense of trying to make a profit,

but in the sense of being entrepreneurial. The basic research group leader has to try to get resources from all possible directions: from internal resources in his university, from philanthropic sources, from industrial sources, from regional and national and international sources.

Experience shows that the first class scientist can get all of this, and then they have a very rich menu of support and they can really do a fantastic work, and this is exactly the case in the top scientists groups in the United States, and there are some groups in Israel which have these features.

In Europe you get from the government what you get, and either you are happy or you are unhappy, and that is the end of it, very little. Well, you get from national science foundations in addition, but that is also governmental, and very rarely you get from other sources, and I think this is again one of the reasons for the difficulties.

It is very important that basic research will take risks, very serious risks, and the managements of institutions have to encourage the risks, and finally of course, basic research in the most remote university, must be always judged by international standards, never by the local standards, not of the region, not of the country, not of anybody except the full international standards.

One word about the school system. The educational system is a pyramid. It starts with nursery school and kindergarten and it ends with the Ph.D., unless we include in it lifelong adult education. The academic system has to train the teachers. Our academic system fails miserably in training the teachers. We have teacher colleges that are doing reasonable work. The universities are failing miserably in training school teachers. What they are doing is that they are training them in the "School of Education" to write papers about education, and let us say in the science departments they learn physics or biology or whatever, but they don't learn to be a biology teacher, and you can go on and on and on, but universities must contribute to extra-curricular activities to curriculum developments and in that respect Israel is actually one of the leaders in the world.

Education is too important to be left to the educators. It touches every citizen in such a profound way and the future of every country in such a profound way, and now more than ever, and therefore the entire academic system has to be involved with it.

And finally we have the problem of time. The time-scale of everything I talked about, education, basic research, social problem, industry development, schools, is 10 to 20 years. The horizon of the politician is the next election, and if the next election are four years away – we are lucky, because here it comes two years away.

Now the result of this of course is that the politician is encouraged to do one of two things, both of which are wrong: either to change nothing, or to have a total reform and reorganization every year-and-a-half, and it is not even clear to me which one is worst, probably the total reform is worst than doing nothing, and therefore, to a large extent the academic system has to try – again remember the story of California – to work from its own roots and try to institute a change by itself, in spite of the government, with the government, separate from the government, because otherwise it will not survive.

Now that is really the end of my remarks, except to say that even if I am wrong in 50% of what I said, the university of the 21st century is a different animal from the university of the past. The multidisciplinarity, the distant learning, the intellectual property, all of these aspects are giving a whole new twist to the university, and we better learn how to deal with them and get used to functioning within such a system. Thank you.