

On education and the future of the Arab World

By

Ismail Serageldin

Remarks delivered at
The Royal Society, London
14 November 2013

Introduction:

Ladies and gentlemen,

It is a great honor to find myself in these historic premises, in the bosom of one of the greatest institutions of learning that the world has known, surrounded by such an august gathering of wonderful people, all of whom I admire, and many of whom I not only know but am proud to consider my friends.

My thanks to our host, the Alexandria Trust, represented here by the chair of its board of trustees, Emma Playfair, and by its founder Salah Khalil for having made this possible. I am of course partial to the Alexandria Trust, as it not only shares the affinity of name with the Great Library that I now head, but also because it shares a vision and commitment to education and learning as the way to improve and even transform societies.

The trust was launched in 2011 by the youthful Egyptian philanthropist Salah Khalil and a group of Arab business leaders, who are determined to make a difference to education across the Arab region, to get it one day, to recapture the legacy of ancient Alexandria as a world leader in education and learning.

Salah Khalil is also implementing on a separate track a truly ambitious project to present the seminal books of all disciplines of learning in a new way that makes it accessible to today's learners, and also will be providing it in Arabic. An awesome vision that deserves our support.

But at the Trust and in the Library of Alexandria, we all share a vision that education and learning can best flourish in a climate of academic freedom and enquiry in every discipline and at all levels, and that the product of such an education is a young person equipped with an enquiring and critical mind, the

ability to relate well to others and a confidence in their place both as active citizens and productive workers.

But clearly my friends, this is not happening in Egypt or in the Arab World today. So let me take you on a journey into the tumultuous events in our part of the world, and in Egypt more particularly, before we get back to some issues on the substance of education:

Birth Pangs of Egypt's New Republic

As you all know, this has been the “Arab Spring”. Ordinary citizens have toppled autocrats and still battle dictators armed with little more than their convictions. Ultimately, they cannot be denied. For as Victor Hugo has said: “No army can defeat an idea whose time has come”. And freedom, human rights and democracy are ideas whose time has come for even the most remote corners of the globe.

The youth in our part of the world have led the uprisings, they are the embodiment of the unconquerable spirit described by Henley's *Invictus* :

It matters not how straight the gate,
How charged with punishments the scroll,
I am the master of my fate,
I am the captain of my soul.

This surge for freedom, reminiscent of the best in human history, will face setbacks to be sure. But ultimately, it must triumph.

The Egyptian Revolution corrected its path on the 30th of June 2013 when unprecedented numbers of Egyptians, in their tens of millions, signed individual declarations asking President Morsi to step down, and took to the streets and said “No” to the rule of the Muslim Brotherhood. In the face of this overwhelming public disavowal of the government and in the absence of a formal procedure to impeach the president, the army joined the leaders of the opposition, along with the religious leaders of the country and the judiciary, to force a change of government. It was no coup, it was a genuine people's revolution.

Regretfully, violence has now reared its ugly head in what was largely a non-violent revolution since the 25th of January 2011 and renewed on the 30th of June 2013 by largely peaceful demonstrations. Many people have been killed. A historic and largely joyful process for most Egyptians has been marred by the

horror of the violence, the agony of the wounded, the finality of death and the grief of the mourners.

We need a full investigation to clarify what happened, and find the guilty in all acts of violence since 25 January 2011. Every attack, every death, has to be accounted for professionally, transparently and in the context of the law.

Egypt has turned a page and is writing a new chapter in the history of its second revolution. Sadly, part of that is now written in blood. Along with others, I decry all loss of life, and I warn that censorship is still a breach of free speech that should be resisted. I have called for national reconciliation of all Egyptians. That is the path for the future. But emotions are running high, and few are willing to listen to this appeal at present.

And today if in Egypt the people have shown that they could be moved in their millions to reject the Islamist future promoted by the Muslim Brotherhood, they must equally avoid the returning specter of the autocratic state. In their eagerness to reject the past, to bring law and order, there is an unhealthy willingness to move towards looking for a charismatic savior and a centralized state. History shows that this is not the path to building democracy. It is good to remember the famous statement by Lord Acton: "Power corrupts and absolute power corrupts absolutely."

But systems of governance are not born perfect. They are built by the exercise of political participation and the experience of defining the boundaries of the acceptable.

Like everywhere else there are many obstacles to the advance of democratic practice, even after the principles of democracy have been accepted... Powerful interests defending their privileged position, competing ideologies, uncertain loyalties, corruption... all mean that every society moves towards its democratic ideal slowly... two steps forward, one step backward...

But despite these caveats, I believe that in my part of the world powerful Islamic zealots are still the biggest risk to implementing our dreams of a democratic society and promoting freedom of expression in art and science.

But I am confident that the amazing spirit of Egyptian youth will shepherd our nation towards openness, freedom and the rule of law. But for youth to reach the full promise of their abilities and to be able to give the full measure of their talents,

our education systems must be totally overhauled, hence I return to the opening theme of these remarks: Education, and I mean education in the broadest sense.

Education

Education is the lifeblood of societies. It is a broad societal affair involving parents, teachers, society at large and the younger generation itself. For it does more than the transmission of the cumulative knowledge of the past to a new generation, it actually provides the tools and the attitudes that make youngsters lifelong learners, for knowledge is not frozen in a particular set of schoolbooks at a particular time. Education socializes youth on relating with their peers, and helps them internalize the values that make them effective citizens and teaches them how to interact in the rough and tumble of the marketplace of ideas. Above all, it introduces them to the profound ethical constructs that they will carry into the journey of their lives behaving as good human beings.

However, that is not what happens in most of our schools today. Furthermore, the existing model of education, even in the West, under the heading socialization tries to enforce certain qualities deemed important by future employers. Schools in fact teach children the discipline to endure boring and repetitive tasks that they get graded for mastering better and better. Their natural tendency to communicate with their peers, to run and play is curbed, by being told to “sit still and be quiet”. If they do not take easily to that regimen, they are now treated for Attention Deficit Disorder and even given drugs to assist them to comply. They have to stay hours listening to an authority figure, in a setting that is rarely a beautiful architectural space, on a chair and desk that are that are rarely particularly comfortable furniture.

The student learns to be docile and to respect authority and to manage to do repetitive and boring tasks effectively. The implicit model is to train workers for boring repetitive tasks in factories or offices, something the industrial economy of the 20th century clearly demanded, despite its dehumanizing aspects so effectively portrayed by Charlie Chaplin in “Modern Times”.

However the globalized modern economy is rapidly changing, and robots are more likely to take over the more repetitive aspects of jobs in the future. We already see this clearly on the assembly lines of the automotive industry, being followed by industry after industry. Likewise, in offices tasks like data entry and checking are also increasingly being taken over by computers. The future will be for a lot more collaboration between humans and machines, and thus we must question all aspects of the educational enterprise that we have inherited from the last century.

No matter how successful they have been, the policies of the past are rarely the best to confront the challenges of the future.

Education is likely to change profoundly in the coming decades, in terms of content, participants, methods, and organizational setting. But that kind of issue will take us into a more technical discussion, that for tonight I would like to avoid in favor of a broader, more philosophical, perspective.

And I will not get into the specifics of how ICT is transforming social relations and educational enterprises. From Massive Online Open Courses or MOOCs and flipped classroom instruction in Universities we have come a long way since the UK pioneered the Open University some 45 years ago. And we still are rushing headlong into a wonderful if unknown future. Facebook and twitter have redefined the notion of peer groups and communities bringing more and more of our contacts through the world of the internet.

But are we not losing something valuable here? I will not talk about the value of longer attention spans, rather, I want to go back to fundamentals about knowledge and self-knowledge. Data when organized becomes information, which when explained becomes knowledge. But our human societies need more than knowledge, they need wisdom. That requires time, reflection and the patina of experience. Thus we very much need the insights of the social sciences and the wisdom of the humanities in addition to the knowledge of the natural sciences.

Regretfully, the gap between the social sciences and the humanities on the one hand and the natural sciences on the other, remains vast, especially in our part of the world.

The “Two Cultures” revisited:

When C.P. Snow wrote about “the two cultures” over half a century ago, he bemoaned a degree of ignorance, even rising enmity between the culture of science and the culture of the humanities. The ignorance of each about the other was noticeable then and has grown since. Today, that non-science culture has mutated into a variety of groups, all sharing the same level of ignorance about the basics of science. Some are gravitating towards a fundamentally anti-science posture. Many deny that science is anything more than just another discourse reflecting the power relationships of society, and that its practitioners, the scientists, are no more than another social group vying for resources and power. They politicize debate and reject evidence.

Yet Science is different. We lose sight of that difference at our own peril. In science, there is no individual authority, no book that governs right or wrong, no high priests that interpret the sacred texts. There is a method. A method based on rationality and evidence. Science encourages the engagement with the contrarian view, and hails the overthrow of existing paradigms and conceptions as breakthroughs. Most of the innovators in science are very young. Einstein was 26 when he published his revolutionary papers in 1905. Watson was 25 when he co-discovered the structure of the double Helix. All were hailed for their discoveries and are in the pantheon of the greatest scientists.

But powerful as the empirical scientific method is, it is not enough to deal with many of our problems, which are not just individual or systemic, but also social and environmental, local and global. We need the insights of the social sciences and the wisdom of the humanities. We need to bridge the two cultures more than ever before.

The methods of the mainstream social sciences may differ from those of the natural sciences, but their scholarship is not in doubt. Usually more qualitative than quantitative, the social sciences tend to description rather than prescription, and avoid generalizations across societies, with the obvious exceptions of cross-sectional economic studies.

Their tools include the study of narrative, which is a very powerful tool. For example, it is very difficult to come to grips with conflicts within or between societies without understanding their different historical narratives. It is impossible to deal with the Palestinian-Israeli issue if you do not recognize their totally

different historical narratives, or to understand the problem of Race in America, or the post-colonial context in many places.

Thus, if we cannot aspire to be moving to a unity of knowledge as suggested by some, most notably E.O. Wilson in his *Consilience*, we can aspire to reject the growing chasm between the two cultures and promote pluri-disciplinary work.

At present, many of the problems of our time, from gender to medical issues, from the deployment of technology to environment, from social cohesion to international peace, focus attention on human individuals and societies as much as on the natural world we live in. Human beings are social beings, living things that have motives, intentions, norms and values, whose social institutions have meaning symbols, rituals and cultures... All of that is not directly measurable, but has to be inferred from observations. These are precisely the contributions of the Social Scientists. For the benefit of humanity in this new century, we must bridge the rift between the two cultures. We must be able to bring their different and complementary insights to bear on the great problems of our time.

Allow me now to turn to Values.

Values & The Values of Science:

When we talk of values, the Library of Alexandria is dedicated to the pursuit of knowledge and the promotion of dialogue and understanding, between cultures and within cultures. We confront the currents of obscurantism, fanaticism and xenophobia with a steely determination to uphold the values we hold dear, among which are the respect for human rights, rationality, the maintenance of a civil discourse and the promotion of personal freedoms, especially the freedom of expression. These are the basic building blocks of democratic systems.

Today there are those who still fear that the Arab Spring will give way to the Islamist winter. That the idealism of the revolutionary democrats will only pave the way for theological autocrats. Yes, Islamist sentiment is strong and zealotry is expanding in parts of the public realm. But the defense against extremism is not by censorship or autocracy; it is by embracing pluralism and defeating ideas with ideas.

And here Science has much to say. Especially through what I call the Values of Science.

Science has much to say to the Islamist zealots who preach an intolerant doctrine. It has much to say to young democrats enamored of the new technologies. It has much to say to those who yearn for a better economic future. And more importantly, it has much to say about the kind of values that we must adopt if our societies are to be truly open and democratic, for these are the values of science.

To the Islamists, who yearn to return to their particular vision of the Muslim past, we say, there is a great Arab and Muslim tradition of science and tolerance that you must be aware of. Indeed, throughout the dark ages it was the Muslims who held up the torch of rationality and reason, while Europe was in the throes of bigotry and intolerance.

Centuries before Bacon, Descartes and Galileo, Ibn Al-Haytham (10th C) laid down the rules of the empirical approach, describing how the scientific method should operate through observation, measurement, experiment and conclusion:

“We start by observing reality ... We then proceed by increasing our research and measurement, subjecting premises to criticism, and being cautious in drawing conclusions... In all we do, our purpose should be ... the search for truth, not support of opinions”.

Likewise, listen to the voice of Ibn Al-Nafis (13th C) on accepting the contrarian view, subject only to the test of evidence and rational analysis.

“When hearing something unusual, do not preemptively reject it, for that would be folly. Indeed, horrible things may be true, and familiar and praised things may prove to be lies”.

This is the Muslim tradition that must be revived if the Arab World, Muslim and non-Muslim alike, will indeed join the ranks of the advanced societies of our time. Rejecting politicized religiosity, and reviving these traditions would promote the values of science in our societies.

To the youth, enamored with new technologies or simply seeking a better economic future, we say: remember science and the scientific method, for it is scientific insight and knowledge that gives birth to technology. We must be the producers of knowledge not just the consumers of technology. That will not happen unless we open our minds to science and the scientific approach and open our hearts to the values of science.

What are these values of science that I keep returning to as the basis for enhancing human capabilities and ensuring the public welfare?

As Bronowski observed more than half a century ago, the enterprise of science requires the adoption of certain values: Truth, honor, teamwork, constructive subversiveness, engagement with the other, freedom, imagination, and a method for the arbitration of disputes. The values of science are adhered to by its practitioners with a rigor that shames other professions.

Truth: Any scientist who manufactures his data is ostracized forever from the scientific community. She or he may err in interpreting the data, but no one can accept fabrication of data. In no other field of human activity is this commitment to truth so absolute.

Honor: Scientists reject plagiarism. To give each his or her due, is essential, a sentiment well captured in Newton's statement that ... "if I have seen farther than most, it is because I have stood on the shoulders of giants".

Teamwork has become essential in most fields of science. And the essence of teamwork is to ensure that all the members of the team receive the recognition that they deserve.

Science advances by overthrowing the existing paradigm, or at least significantly expanding or modifying it. Thus there is a certain **constructive subversiveness** built into the scientific enterprise, as a new generation of scientists makes its own contribution. And so it must be. Without that, there would be no scientific advancement. But our respect and admiration for Newton is not diminished by the contributions of Einstein. We can, and do, admire both. This constant renewal and advancement of our scientific understanding is a feature of the scientific enterprise. It requires **tolerant engagement** with the contrarian view, accepting to arbitrate disputes by the rules of evidence and rationality.

Science requires **freedom**: Freedom to enquire, to challenge, to think, to imagine the unimagined. It cannot function within the arbitrary limits of convention, nor can it flourish if it is forced to shy away from challenging the accepted.

The content of the scientific work is what is discussed, not the person who produced it, regardless of their nationality or the color of their skin or the god they choose to worship or the ethnic group they were born into or their gender. These

are societal values worth defending, not just to promote the pursuit of science, but to have a better and more humane society. These are the **central core of universal values** that any truly modern society must possess.

The role of educational institutions:

The role of educational institutions in this domain of values is particularly important. For they have a unique double responsibility. Universities are both the custodian of the past and the inventor of the new, not just in terms of the socialization function and the societally approved behavior of citizenship, but in terms of values and culture. Cultural identity and the meaning and role of our heritage are part of it. History, archeology, cultural studies are all part of learning about our past and maintaining our heritage. But universities are very much the palaces where the young learn to challenge the existing and the inherited, to seek novel answers and to invent the new. Thus it becomes the locus of challenging the status quo, and sows the seeds of innovation, whose products and constructs will become the heritage of the future. That double process of preservation and renewal, of authentication and opening up to the foreign and the new, is one of the unique functions of the university, which will remain and will be expanded in the future.

The Values we hold define who we are. The Values of Science are essential, but we also need to ensure democracy and freedom for all. We also need to address issues of Social Justice, of Participation, of Social cohesion, mobility, justice and pluralism. These values, taken together with the values of science, will help define a truly democratic society, where each can blossom to his or her full potential, and give to the full measure of their abilities and talents.

Values create a society out of a collection of individuals. Values enable transactions to take place and bridge the inter-generational divide. Values are what make a human society worthy of the designation “human”. We have come to rely on our educational system to reinforce what parents do at home in nurturing the correct values in their growing children. In the educational system, values are forged by teacher example and student practice.

Values include providing youth with a sense of a higher purpose than mere material gain. They under-gird the dignity of the individual and the mutual respect so necessary for civilized discourse. Promotion of these values is part of promoting a culture of humanism, a culture of peace.

Indeed, each human being has to have individual freedom and group identity. A properly functioning system of values in our educational systems will ensure that this group identity is not at the expense of the bond of common humanity, and that respect for human life does not stop at some political boundary. Universal values are an essential part of the society we are all creating at the start of the new millennium. This requires balance. Balance between the emancipation of the individual and the harmony of the community, between the celebration of diversity and the recognition of our common humanity. Only thus will we be able to promote peace and have a truly dynamic democratic system built on equity and justice.

Conclusions:

Ladies and gentlemen,

Forgive me for having spoken so long, but as you can see, these are topics that I feel strongly about, and that today, in my part of the world, have literally become matter of life and death, on a daily basis.

And so, to our youth I say: You have been called the children of the internet, or the Facebook generation, but you are more. You are the vanguard of the great global revolution of the 21st century. So, embrace the values of science, and go forth into the journey of your lives, to create a better world for yourselves and for others. Think of the unborn, remember the forgotten, give hope to the forlorn, include the excluded, reach out to the unreached, and by your actions from this day onwards lay the foundation for better tomorrows.

To the distinguished group assembled here I say: Thank you. Thank you from the bottom of my heart for having come tonight.

To my friends in the Alexandria Trust I say: much of what we seek may seem to others like a dream, but we have learned that impossible dreams can be realized. So let us be bold, let us dream, and let us act accordingly.

Thank you.