

Bibliotheca Alexandrina

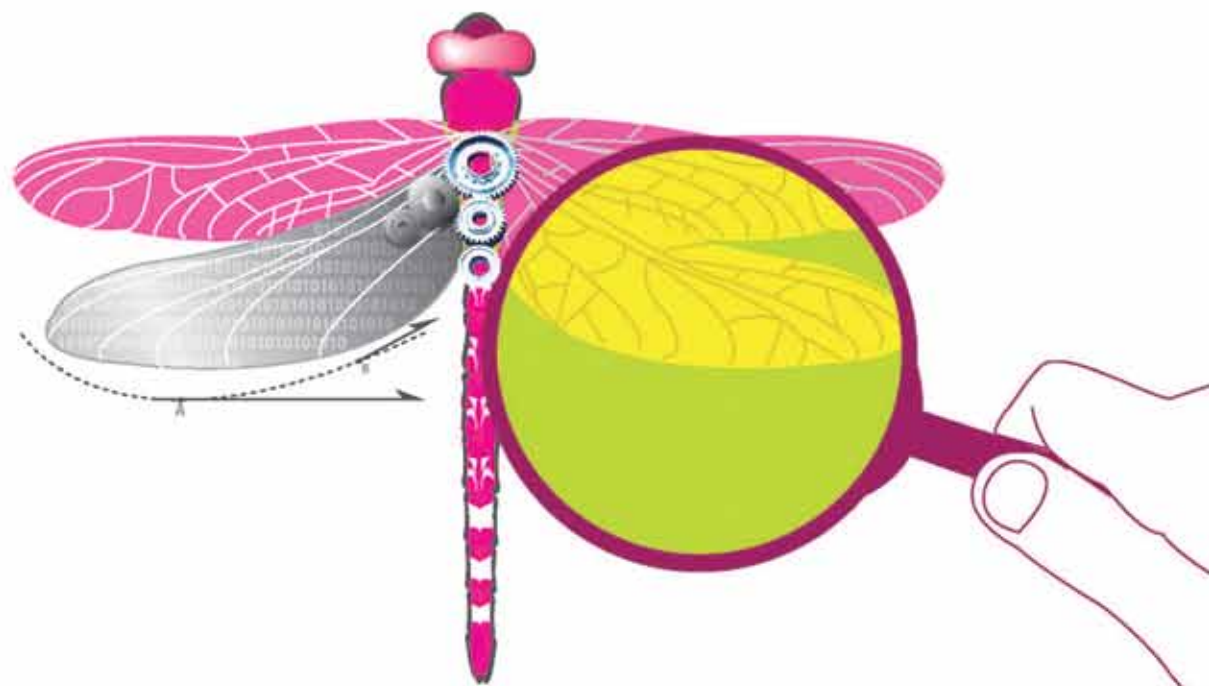
Newsletter

Quarterly Issue No. 14, July 2012



Micro Research Grants

for Egyptian School Students



For Egyptian school students seeking funds to finance innovative ideas in one of the following categories:

- Biology
- Chemistry
- Engineering
- Environment
- Information Technology
- Materials Science
- Physics

More information and application form are available at:
www.bibalex.org/cssp/micorg

CONTENTS

Bibliotheca Alexandrina Newsletter

Issue No. 14, July 2012

Published by the Media Department

Director, Bibliotheca Alexandrina
General Supervisor
Ismail Serageldin

Editor-in-Chief
Khaled Azab

Managing Editor
Sarah Elhaddad

Contributing Writers
Nagla El Arabawy
Maha Abbas

Proofreading
Rana Eldeeb
Perihan Fahmy

Photographs
Media Department

Graphic Designer
Amal Ezzat

EDITORIAL

Linking Science to Society

2

BA HIGHLIGHTS

Advances in New Life Sciences at
BioVision Alexandria 2012

The Bibliotheca Alexandrina Memory of
Modern Egypt Exhibition in Lithuania

Access to Knowledge: An International
Common Good to Convey

The BA Planetarium Science Center: Ten
Years of Science

8

CONTRIBUTIONS

Observatories in Islamic History

Translation and Conflict

Nanoarchitecture and Global Warming

24

WORDS TO REMEMBER

32



© Bibliotheca Alexandrina 2012

Information in this Newsletter has been produced with the intent that it be readily available for personal and public non-commercial use and may be reproduced, in part or in whole and by any means, without charge or further permission from the Bibliotheca Alexandrina, with due credit to the source.

Contributions do not represent the editorial views of the Library of Alexandria.
Kindly send your feedback, and contributions to sarah.elhaddad@bibalex.org

Bibliotheca Alexandrina
P.O. Box 138, Chatby 21526, Alexandria, Egypt
Phone: + (203) 4839999; Ext: 2237
E-mail: sarah.elhaddad@bibalex.org

Linking Science to Society*

Ismail Serageldin



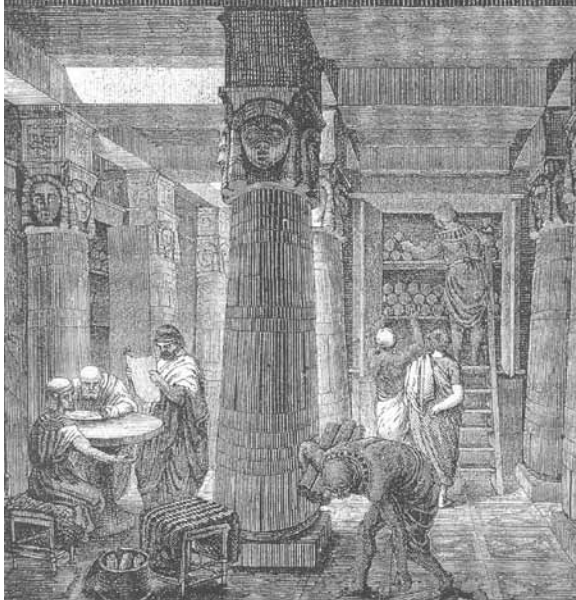
Along with Bronowski, I define science as “the organization of our knowledge in such a way that it commands more of the hidden potential in nature”. In that definition, it is clear that it goes far beyond the utilitarian application of knowledge. It impacts an entire world outlook; from cosmology to being. Perhaps that is why scientists used to be referred to as “Natural Philosophers”. After all, Newton’s master work was the *Philosophiae Naturalis Principia Mathematica*.

These approaches to thinking are very different from the simple embrace of technology. They require a certain set of values that I refer to as the “Values of Science”: truth, honor, imagination, a constructive subversiveness, engagement with the contrarian view and the settlement of disputes by rationality and evidence. The scientific method, from Ibn al-Haytham to Bacon, Descartes and Galileo, is an empirical one of observation, hypothesis, experiment and interpretation.

Indeed, this method is a refinement on that of the scientists of the old age, from Thales on to right here in the Ancient Library of Alexandria. It was here that Aristarchus made the hypothesis that the Earth revolves around the Sun, for the first time in history, in the third century BCE. It was here that Ptolemy provided his model of a geocentric cosmology. That model ruled the world, despite the mathematical questioning of the Muslim astronomers and mathematicians, until Copernicus revolutionized the world

* This article is an edited version of the speech delivered by Dr. Serageldin at the closing session of the BioVision Alexandria Conference 2012.

with his own heliocentric cosmology. It took a long time for the refinements of Kepler and Newton's *Principia* to win the day for the cause that Galileo almost gave up his life for. That is how science advances.



The Ancient Library of Alexandria

The Quest of Science

We know that our knowledge is fragmentary, susceptible to be changed, almost certain to be changed tomorrow. For that is how science advances, by overthrowing the existing paradigm. Moreover, today, the unexplored areas keep growing. Indeed, the more answers we find, the more questions we raise. The unexplored areas are indeed enormously vast.

Science today is a quest where achievements are measured not in terms of the finality of answers, but the fertility of the questions they raise. As our world becomes ever more complex, and our abilities become ever more powerful; we need more than the powerful arsenal of the natural sciences, the tools of mathematics and the acumen of the computing and information sciences. We will need the wisdom of the humanities, and the insights of the social sciences. We need to bring the social and natural sciences closer together in both theory and practice.

The Two Cultures Revisited

When C.P. Snow wrote about “the two cultures” over half a century ago, he bemoaned a degree of ignorance, and even a 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. However, we lose sight of that difference at our own peril. In science, there is no individual authority, no book that governs right or wrong and no high priests that interpret the sacred texts. Instead, there is a method which is based on rationality and evidence. Science encourages the engagement with the contrarian view, and hails the overthrow of existing paradigms and conceptions as breakthroughs.

However, as 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 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.

The concern with quantification in social science is not new, from Laplace (1749-1874) to Quetelet (1796-1874), who invented the notion of the "Average Man", to Walter Isard (1919-2010), there has been a current of quantification and bringing mathematical rigor to the social sciences. Mathematical theories in the social sciences are few and there is a certain distaste for projection, prediction and forecasting, and many important insights are obtained by qualitative observation and perceptive interpretation.

The social sciences apply different methods than the natural sciences to collect different forms of knowledge that enable the development of insights. 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 and 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 together their different and complementary insights in order to bear on the great problems of our time.

A Framework for Linking Science to Society

We are living in the dawn of the Age of Biology. The new revolutionary transformations in our understanding and our capabilities are opening vistas and raising challenges as never before.

It will bring many marvels in production that do not consume or pollute at anything like the levels of the past. However, it will also bring about a speedy and accelerating change in the global marketplace, and the future will belong to the educated, the nimble and the powerful. To those "learning nations" that have the capacity to acquire, process and use knowledge most swiftly and are then in a position to start becoming the producers of knowledge themselves. However, that is not easy. It requires accessing fast-changing knowledge, and the capacity to be fully integrated into the networks of knowledge in the world.



Biodiversity, @oilpalm-biodiversity.info

The issues are becoming more complex in our times. For the first time, the new technologies and the new breakthroughs in science are enabling us to fathom the very composition of matter, to tinker with the building blocks of life. We are communicating by thought, even nervous system to nervous system, we are creating robots with unprecedented levels of autonomy, we are sending probes to other planets, and impacting our own climate, with potentially disastrous effects. A huge explosion in humanity's presence on the planet has meant that we have appropriated ever more of the habitats of other species, with important reductions in biodiversity. The pollution that our agricultural and industrial processes engender is testing the limits of nature's ability to recycle them. Never before has the ability to change the world for the better been more present, and yet never before have the risks of human action—or inaction—been greater.

We must harness this scientific revolution to the benign development of the planet for humanity and other species as opposed to the rapacious misuse of technology for short-term consumption. We need new ethics for science and technology.

Science and the Public Interest

As the pace of scientific discovery has never been greater, and is accelerating at an enormous pace, it is important that the practice of scientific research be governed by certain values and ethical constructs. Not everything that is technically feasible is ethically desirable.

There are a few basic parameters to recognize, firstly, in guiding scientific research; and secondly, in regulating the deployment of technology.

In guiding scientific research, we must be clear about the boundaries between the private sector and the public good. By

definition in economic terms, public goods (non-excludable and non-rival) will require public investment and should be undertaken in the name of the public interest. These are important considerations in the time of Intellectual Property Rights (IPR) and private sector led science and technology. Those who speak exclusively of market forces forget that Adam Smith himself, who formulated the concept of "the invisible hand", said:

"...[the state is responsible for] ... erecting and maintaining those public institutions and those public works, which though they may be in the highest degree advantageous to a great society, are, however, of such a nature, that the profit could never repay the expense to any individual or small number of individuals, and which, therefore, cannot be expected that any individual or small number of individuals should erect or maintain."

[Adam Smith in the *Wealth of Nations*, cited by Arati Prabhakar "Technology Infrastructure", in *Scientific American*, September 1995, pp. 193-194]

The codes of conduct of research should be developed by those with a profound understanding of the scientific issues in conjunction with the representatives of society at large.

A multiplicity of issues must be addressed in the development of a regime to conduct scientific research, not just one or another issue. Thus, public safety, moral repugnance, risk and uncertainty are all elements that enter into the debate. Here, it is going to be important to disentangle the issues and involve the right cast of actors in each debate, and then bring them together again for a coherent and balanced consensus of the majority, recognizing that there will never be an unanimity on the kind of issues raised by the scientific research community.

We must avoid the one-size-fits-all approach. The needs of the different branches of science are enormously varied,

as are the types of issues that they raise. Thus, an open discussion of each set of issues and a flexible approach are needed.

Moreover, an ongoing review of the new evidences is needed to constantly reassess the decisions of the past. In some cases, the long-term effects of things that were thought to be benign appear to be detrimental, from Madame Curie's exposure to radioactivity, all the way to exposure to asbestos or other problems in our time. In other cases, some fears may prove to be unfounded, such as the inability of the scientists to control a chain reaction.

All these considerations are also reflected in the concerns about the applications of science, which we loosely call technology.

For regulating technology, the vision of the partnership between the farmer in the field, with her practical wisdom honed through the centuries, and the scientist exploring the cutting edge of contemporary knowledge in the laboratory is one that is not alien to true scientific values. We must see science as an integral part of our culture, which informs our worldview and affects our behavior. Science has the capacity to capture the imagination and to move the emotions. Science promotes fundamental ethical values in society.

Science is a cultural current that brings together imagination and vision to bear on concrete problems and theoretical speculation. In Blake's immortal phrase, "What is now proved was once only imagined," we find a proof that imagination and vision are at the very heart of the scientific enterprise.

Ethics in the applications of science, the application of technology in our everyday lives, are important. Here, however, a host of other legal, environmental, social, and IPR issues and the Licensing Executives Society International (LESI) issues arise; and they deserve our attention. The LESI issues must

be at the core of evaluating the regimes governing the application of science and technology, from the patent regime to the trade regime.

Also, the separation of perspectives leads to some indefensible activities. For example, the war against smoking in the USA being accompanied by pressure to open the markets of developing countries to the products of the tobacco companies in the name of free trade!

Due to the enormous potential impact of the new technologies, it becomes important that we observe certain approaches to the applications of these technologies. The precautionary principle has been much touted, and it deserves to be used, but always in the form of a comparative evaluation of alternative technologies. We need regulation that is balanced, fair, efficient and effective. Such regulatory regimes must be designed by knowledgeable people and have the support of society if they are to achieve their purpose, which cannot be to block the pursuit of scientific endeavor, or else we will not be able to effectively meet the needs of nine billion people on the planet, without destroying our ecosystems.

This requires that science regains its position to provide the scientific evidence and arguments around which the social debates occur. We cannot have the debates based on some who deny the fact, as we know them, and others who assert them. People are entitled to their own opinions, but not to their own facts. That is the basis for a civil discourse in a pluralistic society. This requires that the civil society everywhere acts not as an opponent of science and technology, but as the voice of the global conscience that reminds the world that we need to have the results of science harnessed to the needs of the many, not just to serve the desires of the few.

However, the burden of this social and global dialogue is large. For today, regretfully,

as the world explores the marvels of the genes; breaks down the secrets of the atom; reaches to the stars and calculates the age of the oldest rocks, many are unable to cope, and regress, looking with suspicion on the new and trying to erect barriers to limit where minds may range. This will require liberating the minds from the fear of the different, the new and the foreign, and the promotion of the respect for diversity in a shared collectivity. These are values inherent in the scientific outlook, which promotes bonds that transcend race and culture to reshape culture in the broader, more tolerant framework that the true scientific enterprise requires and engenders.

Going Forward

Today, we are falling far short of what is needed to achieve the first of the Millennium Development Goals (MDG1), that all the leaders of the world adopted in 2000. There is no longer a chance of reducing the numbers of the poorest and the hungry to 425 million by 2015.

Tens of thousands of people die from hunger-related causes every day. Many of the poor who survive lack access to the fundamental needs of a decent existence. Over one billion people are compelled to live on less than one dollar a day. A sixth or more of the human family lives a marginalized existence.

The marine fisheries of the world are grossly over exploited, soils are rapidly eroding in many parts of the world and water is becoming scarcer as underground aquifers are drawn down faster than their natural recharge rate. Moreover, deforestation is still very much a problem. The global challenges of desertification and climate change and potential loss of biodiversity demand redoubled efforts. Agriculture must be transformed to promote sustainable food security for the billions of food insecure in the world. The urban poverty and environmental challenges in the developing world is unprecedented, as the urban populations

of the developing countries treble over the coming generation.

Therein lies the challenge; will we accept such human degradation as inevitable? Or will we strive to help, in Franz Fanon's evocative phrase, "The Wretched of the Earth?" Will we accept that we are no longer responsible for future generations, or will we try to act as true stewards of the earth? Science is the key to the future. An ethical outlook to science in this new century is what will allow that full potential of scientific discovery to be unleashed for the benefit of the world.

We need such an ethical approach to scientific enquiry and application more than ever in these times that are so full of promise. Together, let us create a space of freedom for the scientists, let us reward the innovators, let us encourage entrepreneurship, let us break down the barriers between nations that deny our common humanity, and while doing all this, let us think of the unborn, remember the forgotten, give hope to the forlorn and reach out to the unreached; and by wise actions today, lay the foundation for better tomorrows.



Advances in New Life Sciences at BioVision Alexandria 2012

Sarah Elhaddad



Biovision 2012

The Bibliotheca Alexandrina (BA) organized its Sixth International Biennial Conference, BioVision Alexandria (BVA) 2012, 22-25 April 2012. The Conference, entitled «New Life Sciences: Linking Science to Society», explored the role of science in achieving inclusive development and a better society.

BVA is an international event organized by the BA in partnership with the World Life Sciences Forum, BioVision. It is held every even year, alternating with the World Life Sciences Forum held in Lyon, France, every odd year since 2004. For many years, the BVA Conference has drawn Nobel Laureates, renowned speakers, eminent scientists, policy-makers and participants from all over the world.

The 2012 Conference addressed a wide range of topics; from the advances in new life sciences to biotechnology and access to food. It also explored the unique biorobotics

technology, and how policies can improve scientific development.

In addition, this year there were several tracks covering topics, such as fostering science in the Middle East, business and science, and a panel especially dedicated to CEOs of some of the world's acclaimed companies dealing with the new life sciences.

Dr. Mohamed El-Faham, Director of the BA Center for Special Studies and Programs, stated that the Conference gathered more than 2050 participants from 30 countries around the world. He added that 115 renowned speakers, including four Nobel Laureates, addressed the Conference in 28 sessions.

keynote speakers included Bruce Alberts, former Editor-in-Chief of *Science Magazine*; Gilbert Omenn, Professor of Medicine, Genetics and Public Health, at the University of Michigan; Koji Omi, Founder and Chairman of the Science and Technology in Society

Forum in Japan, and Sir Peter Lachmann, Emeritus Professor of Immunology at the University of Cambridge.

The Many Wonders of Science

In the opening session, Dr. Ismail Serageldin, Director of the BA, stated that the Conference comes in a time when science is taking enormous steps ahead, in all fields. He affirmed that the world is witnessing a new revolution; the knowledge revolution, where knowledge, technology and life sciences will have a great impact on various issues that concern all societies, such as health, food and economy.

Didier Hoch, CEO of the World Life Sciences Forum, stated that the World Life Sciences Forum holds partnerships with all sectors of the society, with the aim of creating new programs that transform new scientific advances into tangible solutions for the benefit of the society. He expressed his interest to extend the collaboration between the World Life Sciences Forum and the BA in order to come up with new scientific initiatives and projects that offer long-term solutions that address global problems.



Didier Hoch

One of the Conference highlights was the "Science Celebration Day", in which Nobel Laureates and renowned scientists spoke about the beauty and wonder of science.

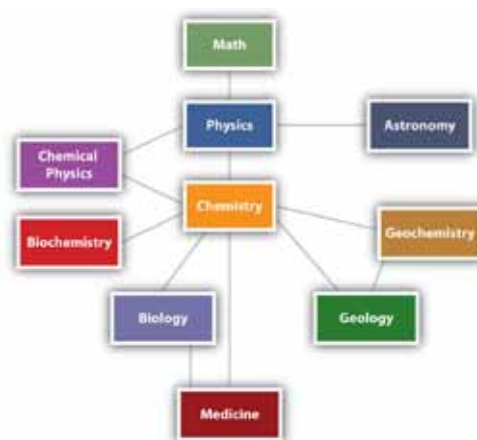
Jean-Marie Lehn, Nobel Prize Laureate in Chemistry, addressed the Conference through a live video conference. Highlighting



Jean-Marie Lehn, Nobel Laureate in Chemistry

the importance of chemistry in benefiting the society, he affirmed that chemistry improved the quality of people's lives, in terms of shelter, clothing, communication, fight against pollution, work safety and providing materials for physics and biology research.

Meanwhile, he stressed that these benefits are of no importance if scientific advances are not shared and spread. "A productive country has to be connected to the world, transfer of knowledge and science education must be a priority and scientists have a great responsibility in the pursuit of knowledge and truth," he added.



"Although the world is still confused about the link between science and society, science has been very beneficial to society, especially in improving world health," said Harold Kroto, Nobel Prize Laureate in Chemistry, in his video message.

He also stressed the importance of early science learning, by demonstrating to the audience the "GESOSET" project, which is an initiative that applies new technology to

provide outstanding science, engineering and technology teaching material.

Introducing Scientific Breakthroughs

In a session entitled “Waging War on Hunger”, the Conference addressed the role of scientists in developing strategies to increase food production in a world where population is increasing, climate is changing and water quantities are failing.

Marc Van Montagu, President of the European Federation of Biotechnology in Belgium, stated that with the increased rate of pollution, environmental changes and huge population increase, biotechnology is more important than ever!

“Science is achieving remarkable progress in the field of biotechnology and is gaining more understanding about plant cells, aiming to develop crops. New technologies allow scientists now to analyze 50-60 genes for 1-2 Euros,” he affirmed.

Ingo Potrykus, Professor Emeritus at the Institute of Plant Sciences of the ETH Zurich, spoke about the Golden Rice; a variety of *Oryza sativa* rice produced through genetic engineering to biosynthesize beta-carotene, a precursor of pro-vitamin A in the edible parts of rice.

According to Potrykus, the Golden Rice can save one million children a year from starvation, and prevent blindness and death from Vitamin A deficiency.

The Golden Rice was supposed to be handed to farmers in 2002, but protests resulting from fear of genetic engineering halted its distribution. “However, it is hoped that the Golden Rice will be available in 2014,” he stressed.

Advances in the field of biorobotics were intensely discussed during the Conference. This unique technology aspires to blend the sparkling and intricate properties of nature with machines. It, therefore, has a mind-boggling potential for various sectors in society, whether it is helping the disabled, gaining a better understanding of the human mind or the human nervous system, studying and reproducing human behavior and cognition or mimicking natural behaviors, in addition to the ethical implications associated with delving into questions on what life is.

Kevin Warwick, Professor of Cybernetics at the University of Reading (UK), presented the idea of a robot with a biological brain, in which the biological brain controls its own moving robot body.

Golden Rice Grain compared to White Rice @Wikipedia.com





kevin warwick

"This new research will enable us to investigate how the brain learns and memorises its experiences. It will also move our understanding forward of how brains work, and could have a profound effect on many areas of science and medicine," he said.

Science serving the Society

Mostafa El-Sayed, Julius Brown Chair and Director, Laser Dynamics Laboratory at Georgia Tech, spoke about the many advantages of nanotechnology, and how it can be linked to society. He stressed that nanotechnology is a new and cheap technology with promising potentials.



Mostafa El-Sayed

He stated that nanotechnology deals with developing materials, devices or other structures possessing at least one dimension sized from 1 to 100 nanometer. This helps in developing new materials with different functions.

He added that new materials formed applying nanotechnology helps the industrial sector, and can have a very positive impact on economy, and the health sector.

Shedding light on Science Foundation Ireland (SFI), David McConnell, Professor of Genetics at the Smurfit Institute of Genetics, Trinity College Dublin, affirmed that science has a social and economic responsibility, and that it is the most important source of knowledge and key driver for developing economic and social programs.

He stated that the SFI is one of Ireland's leading initiatives that work to provide distinguished scientific knowledge to the society.

The SFI invests in academic researchers and research teams who are most likely

to generate new knowledge, leading edge technologies and competitive enterprises in the fields of science and engineering underpinning three broad areas: biotechnology, information and communications technology and sustainable energy, and energy-efficient technologies.

Abdallah Daar, Professor of Public Health Sciences at the University of Toronto, presented to the audience the Canadian experience in funding scientific research for the benefit of the society.

He stated that Canada is the first country in the world to allocate 225 million dollars of the foreign aid for funding scientific projects, through the "Fund of Development Innovation". The fund identifies global grand challenges in health, funds innovators in low- and middle-income communities on a competitive basis, and supports the implementation and commercialization of

solutions that emerge from the research; for the benefit of the society.

Alongside the Conference, the BA organized a major fair entitled: "BioFair@BioVisionAlexandria 2012", which offered 14 exhibitors, including FAO, World Bank, WHO, Springer, and TWAS, an opportunity to showcase their products and services to the participants, as well as Nobel Laureates and eminent scientists.

Preceding BVA 2012, TWAS/BVA.NXT 2012 took place on 21-22 April 2012. TWAS/BVA.NXT is an interactive event intended for eminent young researchers from the developing world. It was held in collaboration with the Academy of Sciences for the Developing World (TWAS) under the theme: "Scientific Innovation in the Developing World: From Theory to Practice". It explored scientific innovation in the developing world and highlighted its importance for sustainable development.



Conference Attendees

The Bibliotheca Alexandrina Memory of Modern Egypt Exhibition in Lithuania

As the Bibliotheca Alexandrina (BA) strives to continue its role as Egypt's window on the world, and the world's window on Egypt, the BA Memory of Modern Egypt (MoME) project recently organized the first Egyptian cultural exhibition in Vilnius, Lithuania, entitled: "Memory of Modern Egypt: Discover Egypt in the 19th and 20th Centuries" at Vilnius University Library in Lithuania.

MoME is an attempt to create the largest digital library of materials with cultural and historical value relating to the history of modern Egypt starting from the beginning of Muhammad Ali's reign in 1805 to the end of President Sadat's era in 1981. The website puts together thousands of collected and digitized material including documents, pictures, audios, videos, maps, articles, stamps and coins associated to public figures and events of this time period.

The material was obtained and donated from libraries, private collections of senior Egyptian politicians and writers, private institutions and groups relating to the modern history of Egypt during the last 200 years, that



Mohamed Ali Pasha 1805, MoME collection



The 6th of October 1973 War, MoME collection

is in addition to the Historical Archive of the Library of Alexandria. Valuable additional material continue to be added whenever they are available as the digital library aims to be the main source of historical material relating to this remarkable period in Egypt.

During the Exhibition, Egypt during the 19th and the 20th centuries was presented through a unique collection of pictures, documents and press archives that show samples of the most popular events that shaped Egyptian modern history (1805–1981).

The collection at the Exhibition included the Royal Family in Egypt (1805–1952) collection, the Saad Zaghloul Pasha and Egyptian Revolution 1919 collection, and the Gamal Abdel Nasser and Anwar El-Sadat collections, the 6th of October War 1973 collection, the Jerusalem Visit and Camp David Summit (Peace Journey between Egypt and Israel 1977, 1978) collection.

Sports in Modern Egypt (1911–1975) was also tackled by the Exhibition, in addition



The first official Football Team in Egypt (Egyptian Railways Club 1903). Old commercial advertisements, MoME collection

to the Suez Canal inauguration in 1869, and previous constitutions and parliaments (1866–1956).

The Exhibition also featured posters from Egyptian early cinema (1930–1960), samples of old Egyptian newspapers and magazines, and old commercial advertisements in newspapers and magazines.

The Exhibition inauguration featured a speech by Irena Krivienė; General Director of the Library of Vilnius University; Mrs. Janė Hanel, Counsellor of Latin America, Africa, Asia and Pacific Department in the Lithuanian Ministry of Foreign Affairs; and Mr. Nicholas Hersh, US Cultural Attaché in Lithuania.



Old commercial advertisements, MoME collection



MoME Exhibition

The inauguration also featured an orientation by Mahmoud Ezzat, Head of BA Memory of Modern Egypt Unit; about the Bibliotheca Alexandrina, and MoME project and website, as well as screening of the MoME documentary.

On the fringe lines of the Exhibition, Ezzat gave a lecture at the Lithuanian Parliament about the Arab Spring and 25 January Revolution in Egypt at the Conference "New Voice of Egypt".

The main aim of the Conference was to familiarize participants with the "Arab Spring" and to evaluate the role of non-governmental organizations and reveal the prevailing attitudes of today's Egypt. The Conference was organized by Kultūros centras "In Actio", coordinator of Anna Lindh Network in Lithuania, in cooperation with Bibliotheca Alexandrina and The European Information Office.

Ezzat spoke about the "Arab Spring" and its importance to the Egyptian consciousness, and described the current situation in the country. During the discussions, Egyptians and Syrians residing in Lithuania presented their points of view on all situations during the "Arab Spring" and how Lithuania reacted to actions of the Revolution.

Andrius Bečys, President of Kultūros centras "In Actio", stated that the target audience of such events are non-governmental organizations members and all citizens

interested in Arab culture and history, and possibilities for cooperation. He added that the cooperation between his organization and the BA can offer Lithuanian citizens the opportunity to discover treasures of Egyptian culture and great opportunities for intercultural cooperation.

Ezzat also gave several lectures about Memory of Modern Egypt, and late President Anwar El-Sadat, at the Oriental Studies Institute in Vilnius University. MoME and Sadat documentaries were also shown during the event.



Andrius Bečys and Mahmoud Ezzat at the "New Voice of Egypt" Conference

The Egyptian Revolution 1919, MoME collection

MoME Website in English

Following the success of the event, the Bibliotheca Alexandrina will soon be launching the English version of the "Memory of Modern Egypt" website (MoME), in its efforts to preserve the past and disseminate knowledge worldwide, and for future generations. The English version website will further spread the knowledge and portray the rich history of modern Egypt to non-Arabic speakers, especially that the valuable archived material of the MoME website has been attracting foreign institutions, some of which the BA has cooperated with. To mention a few, The British National Archive Center, Vilnius University Central Library in Lithuania, Association of International Affairs in the Czech-Republic and other respected foreign institutions in Austria, Bulgaria, Greece, Portugal, and USA.

The English version website will offer foreigners and non-Arabic speakers visual knowledge about the history of modern Egypt in detail. That is, through a video or audio of a significant public figure; an old copy of a newspaper documenting a historical event; or even a poster of a film that reflects the society during a turning point in the history of modern Egypt.



Access to Knowledge: An International Common Good to Convey*

Maha Abbas

In the pursuit of actions that promote awareness and deliberation, and in celebration of the World Book Day and Intellectual Property, the Bibliotheca Alexandrina (BA) Francophone Library has organized a seminar for reflecting on the right to Access to Knowledge, thus giving the Francophone the opportunity to highlight its initiatives in this domain, through its values of multilingualism and cultural diversity.

Moreover, being aware of the importance of the access to knowledge, and seeing in it, as Michel Arnaud, an international common good to convey, the BA has initiated numerous activities to spread the philosophy of the access to knowledge and develop the competencies of researchers and librarians to enable them to develop new tools and practices.

In this context, the BA has launched the Access to Knowledge (A2K) initiative, which can trigger the awareness of a large public to the relation between intellectual property and development at the international level, meanwhile shedding light on the access to knowledge, to promote innovation and creativity, and develop an inclusive knowledge society in the Arab World.

The idea of the Seminar initiated mainly from the fact that we live in a world where the information sources are diverse and thousands of people are trying to access information to broaden their minds. However, they face an unpleasant tendency to privatize access to knowledge through an extension of intellectual property and copyright regimes.

Ambassador Naela Gabr, President of the National Commission for La Francophonie;

and Professor Osama El Fouli, Governor of Alexandria, were present at the Seminar. Furthermore, in order to address this crucial issue on the national and international levels, the BA also had the pleasure of receiving Wiebke Dalhoff, Representative of the International Federation of Library Associations (IFLA); Victor Vazquez, Representative of the World Intellectual Property Organization (WIPO) via video-conference; as well as Gaëlle Krikorian, author of a number of books evoking the theme in question, two of which were the subjects of two sessions; namely *Libres Savoirs: Les biens communs de la connaissance* (France, C&F editions, 2011) and *Access to Knowledge in the Age of Intellectual Property* (USA, Zone Books, 2010).

Similarly, the World Blind Union participated through a video that was sent by Christopher Friend and Dan Pescod. The video was shown on the second day of the Seminar. At the regional level, the BA received Hatem Abdel Kader, Counselor at the Ministry of Foreign Affairs; Dr. Mokhtar Waridi, First Secretary of the Permanent Mission of Egypt to the United Nations and other international organizations at Geneva; Moshira Elamrawy, Counselor of Arabic Projects at Wikimedia; and Professor Mohamed Nour Farahat, Professor of Law Philosophy and History, Faculty of Law, Zagazig University.

The main theme of the seminar was knowledge, an engine of economy and social organization. Now that it is digital, it flows and spreads, and is shared with ease, allowing the cooperation of communities and the creation of new knowledge. However, before turning digital, books were one of

* The article is translated from French into English by Suzanne Beltagy.

the most important means of accessing knowledge. In fact, the function of books was to organize and extend knowledge.

Moreover, the book is an object that exists because of its content, and therefore books should not be preferred over readers. When we mention books, libraries come to mind. Libraries are responsible for offering a large public the most democratic mean of accessing knowledge, placing books that cover all domains of knowledge and all views at the disposal of the readers.

In this context, making information available and providing the automatic and essential right of external book borrowing were the first messages sent from the heart of the BA by Dr. Nazly Farid, Director of the BA Francophone Library.

One topic of concern that was discussed in the Seminar, particularly by Gaëlle Krikorian, was the submission of the access to knowledge solely to the producers and the disseminators. The interests of the communication enterprises have become higher than the interests of society, creating an opposition that has never existed until now between those holding the rights and the common good. The diffusion of knowledge became a source of profit, not a service for the entire society. In *Libres Savoirs: Les biens communs de la connaissance* that she co-authored, Gaëlle Krikorian underlines the common good notion. In fact, the common good of knowledge constitutes a pragmatic utopia that proposes new ways for addressing the challenges of the 21st century.

Wiebke Dalhoff, IFLA, spoke of the role of IFLA in defending accessibility. One of these roles consists of finding equilibrium between publication and dissemination. In other words, the author exerts an effort, and this grants him intellectual as well as financial rights. However, what is the importance of the book if you do not have access to it?

Similarly, Dalhoff has emphasized the fact that the connection to knowledge has evolved during the Internet era, and hence the importance of digitally transforming books. In this sense, IFLA works on accessing information through the Internet and activating the role of libraries.

Following these discussions, WIPO, IFLA and the BA compiled a list of recommendations, the most important of which being the provision of an electronic version in at least one regional resource center, such as the Bibliotheca Alexandrina, to facilitate the production and distribution in diverse formats, especially books in Braille; ensuring equal public access to information while maintaining balance in the international copyright system in a profitable manner for all; and recommending to the General Assembly of WIPO 2102 to continue the discussions on the limitations of copyrights and the exceptions provided to libraries and archives within the Standing Committee on Copyrights and Related Rights in order for a forthcoming diplomatic conference to finalize the terms of a treaty in this domain. Finally, all the knowledge generated by public funds should be made available to the public.

The BA Reading Area





The BA ALEXploratorium

The BA Planetarium Science Center: Ten Years of Science

Nagla El Arabawy

It all started as a dream; an innovative endeavor that alters the connotation of science

Throughout ten years of hard work, determination and conviction, the BA Planetarium Science Center has grown to become a leading Egyptian institution in informal science education. Teaching the young generation the values of science and the know-how of research will contribute to Egypt's knowledge-based society building. Hence, the PSC aims at creating a new generation of industrious citizens, equipped with scientific and analytical thinking skills.

The PSC slogan of "Science for All" implies the aim to serve and to reach out to a broader spectrum of society through the PSC three main facilities:

- The Planetarium Theater: Renovated in 2009, the planetarium now runs state-of-the-art projection and production systems, and is considered one of Alexandria's most prominent edutainment highlights. Planetarium specialists produce world-class shows, venturing into the planetarium film production business.

- The History of Science Museum: The Museum is organized chronologically, it features replicas of original masterpieces of major scientific contributions across three different eras; Pharoanic, Hellenistic, and Arab-Muslim; and each era is given a distinctive color.
- The ALEXploratorium: An intriguing science facility equipped with hands-on experiments, interactive exhibits, and a workshop area; all dedicated to bring science closer to the public. The ALEXploratorium has been completely renovated in 2009 by the PSC Design and Fabrication team, to cover: The Discovery Zone, The Workshops Area, and the Listen and Discover Auditorium, which is a cutting edge multipurpose hall for lectures and scientific documentaries shows through 2D and 3D projection systems.



DNA, ALEXploratorium Area

Nearly ten years have passed since our team celebrated the inauguration of the Planetarium Science Center (PSC), in October 2002. I recall the enthusiasm and determination we all had to place this Center among its international peers, shoulder to shoulder. Each project, each activity, and each job was another brick in the establishment," said Hoda El Mikaty, Director of the PSC.



PSC Experiments

"At the dawn of the second decade, we intend to take the Center to new horizons. We have the right to dream not just to be among the peers, but to be one of the best ten internationally, and the number one science center on the regional level," she continued.

El Mikaty also said that on the local level, the Center is hoping to have a wider geographical coverage. She affirms that this will be a gradual process, where, by the end of the coming ten years, the Center will have reached every school child in Egypt. She added that the Center will also be targeting new audiences, such as university students, with activities and projects which are both appealing, and of relevance to this age group and their preferences.

As for the regional level, she asserted that the Center will be capitalizing on the two networks which were established in the last ten years, namely; NAMES (North Africa and Middle East Science centers) network, and ANWST (Arab Network of Women in Science and Technology).

On the one hand, NAMES network, launched on 30 January 2006, aims to foster cooperation between 6 existing science centers and museums in North Africa and the Middle East. The PSC is a founding member of NAMES, and hosts its secretariat office.

On the other hand, ANWST aims to strengthen the collaboration and improve communication among women scientists in the Arab region and their peers around the world; to encourage them to pursue their careers in science and technology. The PSC is also a founding member of ANWST, and hosts its secretariat office.

"We are also hoping to establish PANS (Pan Africa Network of Science centers), which is still under construction and aims to foster cooperation and information exchange among the scattered science institutions in Africa, and to help establish science communication facilities in African States; and MASAD (Mediterranean Association for Science Advancement and Dissemination) that aims to provide substantial contribution to the advancement of science and technology communication within the Mediterranean basin, and of which the PSC is a co-founder," she stressed.

The PSC is also developing new strategies and initiatives on the international level. "We are aiming to foster our collaborations with renowned science centers and institutions working in science communication; to

exchange expertise, and expand our areas of mutual exchange and training as well as the design and fabrication of exhibits and roaming exhibitions, in addition to mutual cooperation in organizing conferences and seminars," stated El Mikaty.

The PSC is also aiming to use science as a means of inter-cultural dialogue, whereby youth in Egypt can communicate with their peers worldwide. "This can be achieved through the organization of, and participation in international STM competitions (Science, Technology, and Mathematics). After witnessing the great positive impact of the participation of Egyptian students in international competitions, we are adamant on increasing our efforts in this regard," she affirmed.

El Mikaty stressed that the PSC will also be aiming to be self-sustainable within ten years. New funding mechanisms will be implemented together with a new approach of pricing the services offered.



Hoda El Mikaty at the Science Festivity



"We will always remain where the underprivileged benefit, but where the privileged have to provide for the services they are offered. We are inspired by the greater purpose of building a science-literate generation, and we are determined to transcend limitations and awaken our forces and facilities; to reach our destination," she concluded.

The PSC qualified and creative team members have studied and received training to design an assortment of annual events that are now considered the highlights of informal science education events all year round in Egypt.

- The Science Festivity (SF): Since 2006, the PSC has been organizing the SF every April under a different overarching theme. The Science Village, composed of kiosks built on the Library Plaza, is the focal point of the festivity. Partners in Alexandria and Cairo host the event on their premises, with the help of the PSC, during the month
- of April. In 2012, the SF hosted around 5,000 visitors over 2 days.
- Intel Bibliotheca Alexandrina Science and Engineering Fair (Intel BASEF): Intel BASEF is an affiliate fair of the Intel International Science and Engineering Fair (ISEF), administered by the PSC at the BA since 2007. The first three winning projects represent Egypt at the international Intel ISEF; the largest pre-college fair in the USA. Intel BASEF 2012 hosted over 1,000 participants and visitors.
- World Environment Day (WED): Every June, the PSC organizes a celebration of the WED under the overarching theme announced by the United Nations Environmental Program (UNEP). The core of the day's activities takes place at the Environmental Awareness Village built in the Library Plaza. The PSC has been celebrating WED since 2007; and in 2010, over 6,500 visitors were received.



- Arab Environment Day: This year, the PSC is planning to celebrate the Arab Environment Day, 14 October 2012, to popularize the event on the national and regional levels.
- Eratosthenes Festivity: This event is organized to honor Eratosthenes; the outstanding scientist and third director of the Ancient Library of Alexandria, 21st century students conduct Eratosthenes's experiment of measuring the Earth's circumference during the festivity. In 2011, Eratosthenes Festivity hosted over 500 attendees.
- School Year Program (SYP): The PSC offers school students a comprehensive, challenging and fun scientific program, divided over four consecutive sessions in line with the school academic calendar. The PSC offers both school groups and individuals the chance to benefit from this innovative program, comprising: workshops, Super Science shows, lectures, fieldtrips, camps, contests, competitions, and exhibitions. This year summer Program is hosting 2,000 students of 4-16 years of age.

Reaching out to the local Egyptian community, the PSC has introduced the Science Clubs Initiative (SCI); a long-term informal science education program which runs over five academic years. The program was launched during 2007/2008 to introduce enquiry-based, hands-on science education



The BA PSC





on school premises in selected public primary and preparatory schools. Science Clubs allocated areas in schools are considered satellites of the PSC activities. The PSC provides the SCl schools with the necessary equipment, computers, and materials to conduct scientific experiments, and aims to cover schools all over Egypt.

The Center has also organized a number of international conferences and scientific exhibitions, targeting university students and professors, and a more specialized audience. Among these conferences and exhibitions are the following highlights:

- The 20th International Planetarium Society Conference (IPS2010), that has taken place for the first time in Africa and the Middle East at the BA Conference Center, in June 2010; fostering the cooperation between the participating planetariums, science centers and museums.
- The Einestein Symposium 2005, organized in June 2005, to honor the centennial of Einestein's "Miracle Year 1905" through celebrating his extraordinary ideas and influence on all humanity.
- Women In Science Conference (WIS 2007), highlighting the importance of the role of women, and supporting their careers in science.
- Biodiversity: Play and Learn Exhibition, the first interactive exhibition to be entirely developed and manufactured within the PSC, showcasing and celebrating the outstanding biodiversity of our planet.



Observatories in Islamic History

Khaled Azab

Astronomy practiced in ancient civilizations was associated with astrology and fortune-telling. This association cast shades of doubt on the practice in the minds of early Muslims. However, with the establishment of the Islamic civilization, which rejected astrology and fortune-telling as contradictory to Islamic beliefs, astronomy was separated and recognized as a discipline based on scientific principles.

This distinction was not accidental: it was based on scientific experiments, analogy and deduction, which Muslims applied in order to meet their need for determining the *Qiblah* (the direction of Mecca) and prayer times. All major mosques, accordingly, appointed astronomers, who used instruments invented by Muslims.

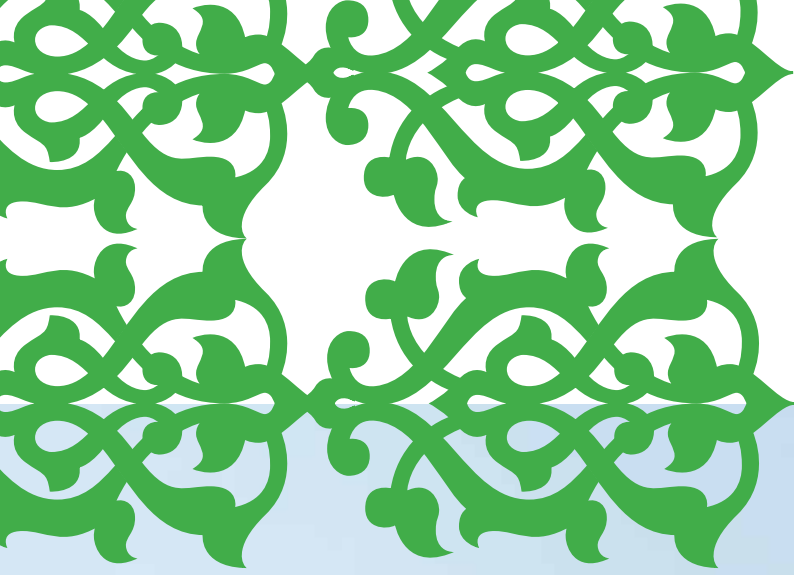
In ancient civilizations, astronomy was shrouded in mystery, but during the Abbasid period, particularly during the caliphate of Haroon Ar-Rashid, this science gained

a special status; this period witnessed the unprecedented construction of large observatories with permanent structures that housed huge, carefully crafted instruments. A sizable number of astronomers were associated with these observatories, which were looked after by the State.

According to Ayden Sayali, an outstanding Turkish researcher who studied astronomical observatories, Islam gave rise to an environment that supported the institutionalization of observatories by creating conditions that were conducive to their establishment and development.

Astronomy enjoyed a special status in the Muslim world, and Muslims were keenly interested in direct observation, accurate measurement, and mathematical theories. Muslim scholars were inclined to specialization and had empirical tendencies. Astronomers crafted larger instruments and preferred to work in teams.





Observatories during the Al-Ma'moon era were for specific research programs. The foremost objective of the astronomers who worked at these early observatories was to draw up astronomical tables based on recent observations of the sun and the moon. Apart from the limitations of these programs, the management and financing methods applied at these observatories were somewhat undeveloped; due to the limited tasks assigned to Al-Ma'moon's observatories set up in Ash-Shimasia and Qasoon, they cannot be compared with the more modernized observatories that were later established in the Muslim world.

The more developed Islamic observatories, which were administratively more organized, were built 150 years after Al-Ma'moon's reign. When Sharaf Ad-Dawlah Observatory was established, a director was appointed to manage it, and the observation program was broadened to include all planets. It is believed that this program was implemented in two stages, as there is evidence indicating that early observations were limited to fast-moving planets along with the sun and the moon.

The primary objective of this Observatory was to draw up new astronomical tables of all the planets based on the most recent observations. Owing to the advancement in this field, there was an inclination towards producing instruments that increased in size over time and appointing efficient specialized staff. The development of observatories strengthened the belief that it was the caliphs and kings who were originally behind the establishment of observatories as State institutions.

The work achieved at the Observatory built by the Seljuk Sultan Malik Shah in Baghdad marked a new phase in observation development. Little information is available about the work carried out at this Observatory, but it remained in service for over 20 years; a relatively long period compared to other observatories. However, astronomers at the time felt that a period of at least 30 years was required to complete any astronomical achievement.



Ulugh Beg Observatory in Samarkand

Maragheh Observatory

This Observatory, which is considered one of the most important observatories in Islamic history, was built in the seventh century AH (After Hijrah), making this century, accordingly, the most important era in the history of Islamic observatories. This Observatory, whose ruins exist up to this day, was built outside the city of Maragheh, close to the city of Tabriz in Iran. The Observatory was built by Holako's brother, Manjo, who was interested in mathematics and astronomy. He entrusted Jamal Ad-Din Bin Muhammad Bin Az-Zazidi Al-Bukhari with the establishment of this Observatory and sought the assistance of a large number of scientists, such as Nasr Ad-Din At-Tusi, Ali Bin Umar Al-Ghazwini, Muayid Ad-Din Al-'Ardi, Fakhr Ad-Din Al-Maraghi, and Al-Maghribi.



Maragheh observatory, @wikipedia.org

The Maragheh Observatory is considered the first Observatory to utilize an endowment fund set up by Muslims, through land and property, to ensure the continuous running of the Observatory, which remained in operation throughout the rule of seven consecutive sultans until 1316 AH.

This Observatory was also an important learning center for astronomy students who learned how to operate astronomical instruments. It also had a large library that contained thousands of manuscripts on various disciplines.

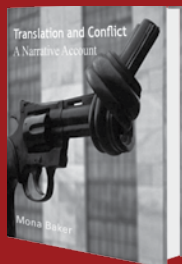
Samarkand Observatory

This Observatory was established in Samarkand by Ulugh Beg, the grandson of

Tamerlane (Timur the Lame). The location of this Observatory was discovered in 1908, when Russian archaeologist, Viatken, discovered an endowment document that stated the Observatory's exact location. While working at the excavation site, he found one of the most important astronomical instruments used at the Observatory: a large arch that had been used to determine midday.

The yard of this 21-meter-high Observatory mounted a hill with a rocky foot. The area of the hilltop was 170 m (North-South) by 85 m (East-West). The garden, as well as the staff residences that surrounded the Observatory's main building are indicative of its grandeur. The archaeological findings also showed that the building was cylindrical in shape, with an elaborate, well-designed interior.

Viatken was of the opinion that the destruction of the Observatory was not due to natural causes and that it could have partially resulted from the removal of its marble slabs, which were used in the construction of other buildings. Through the dome of the Observatory, astronomers developed the Ulugh Beg Tables, which are considered one of the most accurate astronomical tables in the world. The dome had inscriptions that marked the degrees, minutes, seconds, and tenths of a second of the epicycles, the seven planets, and the fixed stars as well as the Earth and its regions, mountains, and deserts. Among the astronomers who worked at this Observatory was Ghiyath Ad-Din Al-Khashi, who excelled in mechanical modeling of celestial movement.



Translation and Conflict*

Dina Elmahdy

Being one of the scholars who have challenged a purely descriptive approach of translation and argued for a more engaged, committed translation practice, Mona Baker, an Egyptian Professor of Translation Studies and Director of the Centre for Translation and International Studies at the University of Manchester in England, has succeeded in creating a direct link between translation and politics, which has been evident through all the sections on the Palestinian Campaign for the Academic and Cultural Boycott of Israel (PACBI) or the Middle East conflict on her website.

Through more readings of her works, it is deduced that part of her interest in translation in relation to politics is correlated to her interest in translation and conflict. It is the potential power of translation and what it does/can do in/to the world with all its changing, cross-crossing narratives that overwhelms her.

In Baker's book, *Translation and Conflict: A Narrative Account*, she addresses some interesting and important issues concerning the practice and ethics

of translation, which may overlap with traditional theories of translation. To her, the power of translation, like most human inventions, can be used either for the benefit or for the ill of humanity, especially in conflict issues. Since our world constantly consists of conflicting, biased, and subverted realities, in addition to a variety of stories to which we have no direct access, no single narrative can capture or trace these constructed complexities whatsoever. However, one way of tracing both what is translated and how it is translated is via narrative theory.

Narratives, as used by Baker, are the everyday public and personal 'stories' that we live by, that guide our behavior, and that also constitute a crucial means of generating, sustaining, mediating, and reporting conflict at all levels of the social life, including, but not limited, to the political aspect. These are the stories we tell ourselves, and not just those we explicitly tell other people, about the world we live in. As for the world of politics, we all take part in it by taking decisions about means of communicating with others, whether we realize it or not.

Baker's narrative theory holds that a neutral translator is a mythical figure, and a translation process that only discovers what exists and relates to it neutrally is by far an illusion. She argues that people's behavior is guided by a variety of changing, intertwining factors: their backgrounds, the stories they believe, and the events they are embedded in, even more than by stories of their gender, race, or any other attributes. Those factors are intrinsically subverting the world around

* This article is also based on Mona Baker's keynote lecture "Translation as Re-narration: Political and Ethical Implications" during the "Translation in and of the World" Conference held in 29 April – 1 May 2012, Doha, Qatar.

them, resulting in countless narrations and renarrations of the world.

Traditionally, the naïve romantic image of translation depicts translators as bridge-builders between cultures for the purposes of promoting understanding between different people. To that end, translators are usually concerned with long-established ideals like how the target language text mirrors or matches the source language text. Knowing how hard it could be to break with such a tradition, Baker thinks of translation in a totally different way. To her, translation contributes to shaping the world as well as being part of the continuous process of its reconstruction; thus, it invokes and expounds new realities.

Contrary to the traditional romantic image of translation, Baker argues that bridges are being blown up all the time; the translation bridge is no exception. Similarly, Professor Michael Cronin, Senior Lecturer in the School of Applied Language and Intercultural Studies and Dean of the Joint Faculty of Humanities, Dublin City University, also defined the process of translation, not traditionally as a bridge, but as a river that runs through banks, eluding and sweeping rocks, travelling far and wide, and connecting people on a rather deep level. The river of translation, similar to all rivers, adds to the banks and is added by them.

To demonstrate her point, Baker drew some interesting examples of translational acts that remain invisible; anything but discrete. The process of “trans-editing” is an example of what takes place in any newsroom, where there is a very thin line between the role of the translator and the editor. In this process, trans-editors are to «change», «add», and «remove» information, leading to a «renarration» of the original narrative into the target language.

Another example is a short clip posted on the Citizens Against Government Waste website, addressing the mismanagement and inefficiency in the US Federal Government, featuring a Chinese professor talking to his students in 2030, obviously amidst the hype of China's rise over the

world and the US downfall. Numerous parodies of this clip have been made, showing the potential powers of translation: the truth/untruth it can communicate, either by twisting facts altogether or generating a new chain of truths/untruths; thus, creating a narrative performance in their own right. Baker refers to the original clip as a ‘point of origin’ and points of origin always seem “authentic”. However, the subtitles added to the authentic clip credibility, where only scholars can question its validity.

In this regard, many questions raise their heads: What do editors do? Who can double check the stories? And who can trace the authentic original source in the framework of the process of «renarration» in the target language?

In context with the political seesaw, Baker points out that scholars of translation, by and large, tend to shy away from dealing with issues relating to ongoing contemporary political conflicts, such as the Palestinian-Israeli conflict, because they are inevitably controversial: consensus has not yet been reached on who is the victim and who is the oppressor. In an attempt to create a direct link between translation and politics, she refers on her website to Robert Young, a Postcolonial Theorist at the University of Oxford, who defines translation as an intercultural communication that cannot, by any means, avoid questions of power relations and political issues.

In contrast to the traditional norms of translation that appeal to ideals of fidelity, equivalence, and neutrality, Mona Baker demonstrates in her book that as translation exists in the world, and since the world does not consist of a neutral, impartial, or objective reality, the space of translation has become a very generic and compliant one for political work. Scholars, of all the people, need to keep challenging the countless narrations and renarrations of the world. Although, they may lose sight, at some point, amidst a continuum of conflicting narratives, yet their embeddedness in those narratives triggers their ability to reason about them.

Nanoarchitecture and Global Warming



Osama Mohamed Omar*



There is no doubt that dealing seriously with the issue of global warming has become inevitable to all political systems in various parts of the world. This drives the whole world, including Egypt, to unite to address the current threats and take action to reduce its negative effects.

Egypt is one of the world's most threatened countries by the negative effects of global warming in terms of agricultural productivity, water resources, and health. The threat due to sea level rise comes on top of those risks. The Nile Delta, along with the coastline of the Mediterranean are in threat of submerging if the sea level rises, which may result in the displacement of millions in these densely-populated areas, as well as the loss of thousands of acres of fertile agricultural land.

It is necessary to implement development projects to reduce greenhouse gas emissions which lead to global warming, in order to raise the level of energy in the fields of transport

and industry. This can be done through the cooperation with several countries to implement such programs; with the aim of developing the use of new renewable energies, promoting green building and capacity development, and formulating our environmental policy.

Due to its unique geographical location, Egypt can develop new and renewable energies, such as wind power, solar energy, and bioenergy. It is hoped that Egypt will produce 20% of its total energy by 2020. It is also important to have sustainable buildings that help in reducing energy consumption by using international rating systems such as LEED, BREEM, and more.

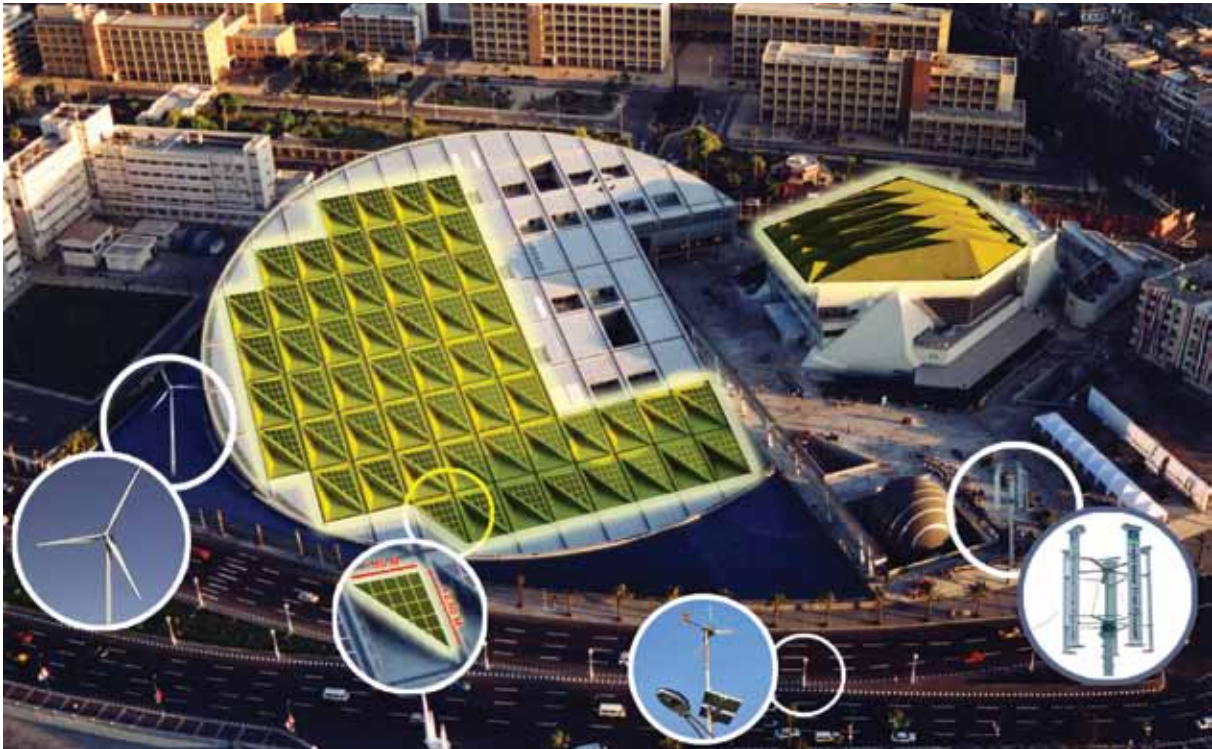
The idea of this study is to convert the building of the Bibliotheca Alexandrina to a green building based on renewable energy, in order to minimize the consumption of electricity generated from burning petroleum products, without affecting the performance of the building.

This can even raise the operational efficiency of the building and improve its interaction with users as well as the environment. This can be achieved through two processes.



Polar Bears by Wissam Shekhani,
[@commons.wikimedia.org](https://commons.wikimedia.org)

*Osama Mohamed Omar is a PhD student at the Architecture Department, Faculty of Engineering, Alexandria University. He is the author of "Advanced Daylighting Technologies for Sustainable Architecture Design".



Bibliotheca Alexandrina renewable energy sources

First: A Gradual Diversion of Energy from Electric Power to Renewable Energy

The rate of Bibliotheca Alexandrina's sun exposure is around 7-12 hours per day. A new design depending on renewable energy can be created; to transform the building from electrical energy to clean energy through three main sources: Nanosolar Utility Panel, Vertical Axis Wind Turbine, and Solar Wind Hybrid Street Lights.

The direction of the slope of the building roof is far from the right direction of sunrise and sunset at 16 degrees. Nanosolar cells must be those cells facing the direction of sunrise at an angle of inclination of 30° to 35 degrees. Therefore, nanosolar cells can be placed on the roof of the Conference Hall to be appropriate to the direction of sunrise and sunset. Applying this approach, the total energy produced from the use of nanosolar cells will be 102.17 mwh/month.

A vertical axis, high-speed wind turbine can be used, provided with rotational speed control systems. The power will be changed

into Direct Current (DC) form by the charging controller; to be saved in storage batteries. Then, DC power is changed into standard Alternating Current (AC) power through an inverter. The total energy produced by applying this approach will be: $4\text{kw} \times 12 \text{ hours} \times 30 \text{ days} = 1440 \text{ kwh/ month} = 1.44 \text{ Mwh/ month}$.

Two lighting systems can be designed into one combined system forming solar/wind hybrid street lights, powered by sunlight, wind energy, or both, generating energy through solar panels and wind turbines. The lamp is designed to maximize efficient use of the energy generated using energy-saving luminaries, which are switched automatically by a light sensor. It is intended for permanent installation and can be located in the remotest sites, since no mains services are required, saving on installation costs, inconveniences, and time. The whole system is virtually maintenance free, there are no daily running costs, and the power is completely free and clean.

Second: Changing Materials Used in Construction to Nanomaterials

It is suggested that the existing materials should be changed to nanomaterial materials, which work to raise the efficiency of the building and create a smart environment that supports user interaction. This can be done using thermal insulation; Vacuum Insulation Panels (VIPs), solar protection, and self-cleaning (The Lotus-Effect).

Vacuum Insulation Panels are ideally suited for providing efficient insulation with a much less insulation thickness than usual. In comparison to conventional insulation materials, such as polystyrene, the thermal conductivity is ten times lower. The maximum thermal resistance can be achieved with minimum insulation thickness. At only 0.005 W/mK, the thermal conductivity of VIPs is extremely low.

Solar protection against the heat from solar radiation is offered by two kinds of self-darkening glass. Electrochromic glass or switchable glazing, which was previously available on the market, but has largely disappeared due to two main disadvantages; a constant electric current was necessary to maintain a darkened state, and larger glass surfaces often exhibited optical irregularities. The advent of nanotechnology has provided new means of integrating electrochromic glass in buildings. The primary difference to the earlier product is that a constant electric current is no longer necessary. A single switch is all that is required to change the degree of light transmission from one state to another.

Many of the other material forms apply self-cleaning technologies. Paints that are relatively thick, in comparison to the thin coatings on glass, also possess self-cleaning properties and are based on similar technical principles. Titanium dioxide, zinc oxide, and other kinds of nanoparticles are used in paints to provide the photocatalytic action that loosens foreign particles to be carried

away by water runoff. Titanium dioxide has long been used as a pigment in paints, but nano-sized particles show greater photocatalytic actions than the normal pigment-sized particles because of their greater relative surface area.

Artificial "Lotus Surfaces", created with the help of nanotechnology, can offer effective means of self cleaning when properly applied. The "Lotus-Effect" is most well suited for surfaces that are regularly exposed to sufficient quantities of water, such as rainwater.

It is very important to note that the new suggested elements have no effect on the external appearance of the building, as shown in the photo below.



External elements of renewable energy sources on the BA Plaza

As a conclusion, the following is recommended for serving the environment by nanoarchitecture and renewable resources:

- Guiding governments to clean energy by using new sources of energy.
- Paying attention to the role of nanotechnology in the production of new materials with small dimensions to help raise the operational efficiency of buildings.
- Enacting laws, and providing the architectural and environmental requirements used to assess buildings in the stages of design, before the actual implementation.

Words to Remember



“Constant development is the law of life, and a man who always tries to maintain his dogmas in order to appear consistent drives himself into a false position.”— **Mahatma Gandhi**

“Men are only as good as their technical development allows them to be.”— **George Orwell**

“The Internet is the most important single development in the history of human communication since the invention of call waiting.”— **Dave Barry**

“It is with children that we have the best chance of studying the development of logical knowledge, mathematical knowledge, physical knowledge, and so forth.”— **Jean Piaget**

“Nothing is unthinkable, nothing impossible to the balanced person, provided it comes out of the needs of life and is dedicated to life’s further development.”— **Lewis Mumford**

“The true democrat is he who with purely nonviolent means defends his liberty, and therefore, his country’s and ultimately that of the whole of mankind.”— **Mahatma Gandhi**

“Freedom is man’s capacity to take a hand in his own development. It is our capacity to mold ourselves.”— **Rollo May**

“More countries have understood that women’s equality is a prerequisite for development.”— **Kofi Annan**

“The growth and development of people is the highest calling of leadership.”— **Harvey S. Firestone**

“The silly question is the first intimation of some totally new development.”— **Alfred North Whitehead**

DESIGN

التصميم الفني
إبداع **IS**
EXHIBITION

Thursday, 5 July 2012, 1:00 pm
Bibliotheca Alexandrina Conference Center, West Exhibition Hall
The exhibition will continue through 4 August 2012.
Open daily from 9:00 am to 7:00 pm except Fridays

يوم الخميس، الموافق ٥ يوليو ٢٠١٢، في تمام الساعة ١:٠٠ ظهراً
مكتبة الإسكندرية، مركز المؤتمرات، قاعة المعارض الغربية
يستمر المعرض حتى ٤ أغسطس ٢٠١٢
يوماً من الساعة ٩:٠٠ صباحاً إلى ٧:٠٠ مساءً، ما عدا الجمعة