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Where Start

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"The beginning is the most important part of the work."

Plato

In Egypt, there have been countless arguments regarding the crucial and immediate need for change. Political, economic, and social circumstances are not favorable. The advice of a wise man would be: "start with the core problem!". A core problem for Egypt would, probably, be the unguided behavior of people due to lack of knowledge.

To young adults in Egypt, Ahmed Zewail is a triggering factor for the critical process of change. On the personal level, Zewail's voyage through time was a superior archetype for progressive change. When he was asked why Egypt did not achieve the status of being a developed county, his answer was: "there is one word that may say it all — the system" (Zewail p. 220). He claimed that three corners form a triangle for change in Egypt — education, bureaucracy and the law.

Knowledge and education are the main concern of this paper. A new way of learning is required that works on genuine synthesis of the values of team work, reliability (absence of fahlawa) and the ethics of work. Zewail stated: "I see no way out but to create some centers of excellence". As for bureaucracy, he believed that "the power of the chair" can impede real progress. Concerning the law, Egypt has a strong judicial system, but the hindrance crops up in the implementation of these laws. Simple examples are phenomena like wasta (influence) and baksheesh (forced tipping), which are a real disgrace (Zewail pp. 221-24).

From the author's perspective, it is essential to confirm and hypothesize the accord of the public with these diagnostic views on requisite change in Egypt. A sample of 135 people (30 faculty members in the American University in Cairo (AUC), 60 AUC students and 45 employees in a business company) were surveyed using a sampling questionnaire. Findings were utterly foreseeable. The majority of respondents (88%) agreed that Egypt is currently experiencing a severe downturn in the process of development and is in need for change in its performance. When the respondents were asked to go for only 3, out of 11, key sources restraining the development of Egypt, the resulting descending rankings were as follows: "education system" (65% of respondents), "passive behavior of citizens" (58%), "bureaucracy" (56%), "the way the law is implemented" (34%) followed by "lack of technology" (26%). Hence, the public virtually share Zewail's interpretations and diagnosis of the Egyptian state of affairs.

On the individual level, what were the endeavors of Zewail to partake in the process of change in Egypt? His momentous move was the proposal of the University of Science and Technology (UST) and Technology Park (TP) projects. As Zewail puts it: "UST and TP are to provide the nucleus for a center of excellence, with the aim of (educating) younger generations in world-class technology, the development of new technologies in the country and the region, and (active) participation in the technology-based global economy, regionally and internationally". He averred that founding institutes should be twenty-

first century frontiers in molecular medicine, genetic engineering, informatics, lasers, water resources, space exploration and others.

On the societal level, although numerous issues contribute to the development of nations, knowledge acquisition plays the leading role. According to the Arab Human Development Report (AHDR) of 2003, it is now a common place that the knowledge gap, rather than the income gap, determines the prospects of countries in today's world economy (AHRD p. 35). There are two connected societal processes that form knowledge acquisition systems, the first is the dissemination of available knowledge, whereas the second is the production of new forms of knowledge in society (AHDR p. 41). According to the report, during the Abbasid state, in the Arab world in general, a scholarly renaissance commenced which was hardly less important than that which transformed Europe during the seventeenth century. The establishment of cities, the extension of roads, the organization of ministries (diwans), the levying of taxes, and other activities led to the unification of calculation systems and the utilization of algebra and geometry. Religious duties, such as fasting, praying, and Hajj, were accompanied by astrological research, which had a great impact on the progress of astronomy. The Arab scientific renaissance was preceded by a renaissance in humanities and social sciences, more specifically in scholastic theology, linguistics, history, jurisprudence and religious exegesis. To cite one example, Kitab Al-'Ain, for Al-Khalil Bin-Ahmad, was the first lexicographic work in history (AHDR pp. 42-43).

Those flourishing days have gone. At the present, the knowledge acquisition system in Egypt is suffering from critical quandaries in the fields of dissemination, translation, and production of knowledge. According to the AHDR, knowledge is disseminated chiefly through socialization, the different stages of education, and by the mass media and the translation industry. Although socialization is a learning process that extents throughout the different stages of the life of an individual, childhood is the most sensitive and impressionable stage. It is stated in the report that the most common style of child rearing within the Egyptian family is the authoritarian accompanied by overprotection. This attitude affects children's independence, self confidence, and social efficiency. With regard to education, despite high rates of illiteracy, decreasing enrollment rates in higher education and a decline of public expenditure since 1985, the prime problem facing Arab education in general is its deteriorating quality. Concerning the standing of Arab countries in translation activities, the average number of books translated per one million people in the Arab world during five years period (1981-1985) was 4.4 books, while in Israel it was 380 books and in Spain it was 920 books (AHDR pp. 51-68). Simultaneously, knowledge production was utterly infinitesimal. Based on the number of scientific publications per million people (26 research papers in 1995), Arab countries are far removed from the production levels of developed countries, such as Netherlands (1,252 papers) and Switzerland (1,878 papers). Also, shockingly, the number of patents registered in the United States from Egypt during the period 1980-2000 was 77 patents, while it was 7,652 patents for Israel and 16,328 patents for Korea (AHDR pp. 70-75).

Hence, Egypt is in desperate and instant need for developing knowledge societies, or scholarly cities resembling that which existed in the Abbasid Period, or what Zewail calls centers of excellence similar to

Max Planck Institutes in Germany, Caltech in the United States or the Technicon in Israel. The challenging question is: can Egypt create core and distinctive competencies based on such knowledge?

As a start, Egypt is in need for a simulation project that would examine the capability of using new perspectives of learning and education in overcoming real life problems of behavior and technology. One could suggest that a potential center of excellence for Egypt is to create a knowledge system in traffic behavior, traffic control and associated technologies. Such endeavor would work on implanting favorable and productive behaviors among Egyptians, even if that behavior was restricted to traffic, uniting everyone under one national goal, and developing technologies that would add to the wealth of the state.

Transportation logistics and traffic violation are Egypt's worst nightmare. For instance, Omar Hillal, a former AUC student, commented: "Cairo streets are scofflaw territory, shockingly disorganized, where red lights are broken like plates in a Greek restaurant." An Egyptian would drive against the traffic on a one-way street and get angry if you tell him to move back, he will bump your car while parking and complain about the way you scratch his car, deafen you with his honk when you stop at a red light and ruin his chance of breaking the law. The sight of a man pacing himself to ride the bus is a familiar one, as the bus slows down to 20 mph for passengers to jump in. Hillal interpreted that: "fifty pounds take care of L.E. 500 in traffic fines and more". Jawad Fatayer, a professor at AUC, once spouted: "the rule of driving in Cairo is to follow no rules". According to an interview by Mona El-Noshokaty, from Al-Ahram Weekly, with Abdel-Moneim Gaber, former undersecretary to the minister of interior, Egypt has some of the highest accident rates in the world, and that "28,000 people were injured and 6,000 killed in 27,000 road traffic accidents in 2002". With all those blunders in the present road-traffic system in Egypt, a societal motivation to instigate a dramatic change in the system and in the behavior of citizens is necessary, and such necessity can be achieved through a knowledge center of excellence.

The organization supervising such giant project should apply concepts and theories of modern disciplines, both in the fields of science and humanity, as well as benefit from other countries' knowledge in the implementation of successful traffic systems.

One of the evolving modern sciences that would, doubtless, help out in understanding and influencing people's traffic manners is the science of "Organizational Behavior". According to Stephen Robbins, comprehending concepts and theories relating to learning, shaping behavior and self-management is elemental. Learning is defined as any relatively permanent change in behavior that occurs as a result of experience (Robbins p. 43). Shaping behavior is systematically reinforcing each successive step that moves an individual closer to the desired response. As to self-management, there is a group of learning techniques that allow individuals to manage their own behavior so that less external management control is necessary (Robbins pp. 47-54). If those concepts, and ample other philosophies dealing with human psychology and social behavior are properly utilized, the outcome would be successful traffic plans, procedures and messages.

An appropriate role model in traffic management, based on more than a few crite ria, would be the United States. According to Fred Mannering and Walter Kilareski, the challenges that faced the US in the implementation and maintenance of traffic systems were both technological and behavioral. Technological challenges are related to infrastructure, vehicle technologies and traffic control technologies. Concerning infrastructure, Americans gained tremendous experience after the construction of the Interstate Highway System, which they recall as the largest civil engineering project ever undertaken in the history of mankind. Engineers were in constant need for technological developments in areas of reconstruction practices, environment impact assessment, materials research, and work zone safety during the continuous process of reconstruction. An unparalleled boost in vehicle technology was set off in the 1970s mainly because of fierce government regulations, concerning air quality and vehicle occupant safety, and energy shortages, as well as intense competition from foreign vehicle manufacturers. Examples of the developed vehicle technologies were safety related items, such as airbags and anti-lock breaks. As to traffic control technologies, numerous safety, navigational, and congestion-mitigation technologies are reaching the market under the broad heading of Intelligence Transportation Systems (ITS). Besides concentrating on technological improvements, extensive attention was allocated to the study of behavioral changes. Due to the growth in private vehicle use and low vehicle occupancy (average number of persons in a vehicle), the US prepared a number of agendas. Programs were initiated to encourage the use of alternative modes of transportation, such as bus fare incentives and increase in private vehicle parking fees, in addition to program s that increase vehicle occupancy, such as high occupancy vehicle lanes and employer-based ride sharing programs. Also, through the study of change in demographics, the increased number of older driving people instigated modifications in highway design, guidelines and practices to accommodate their slower reaction time. The experience of the United States produced a wealth of knowledge and changed people's behavior towards the better.

Egyptians should learn from such a successful experience through direct interaction, dissemination of such knowledge in technology, logistics and behavior, translate what they learn, apply what they learn, and hopefully produce new forms of useful and applied knowledge in that domain for the betterment of society.

At the end of his book, Zewail provided a formula for success for whoever is willing to drive through the road heading towards development and prosperity. Determined young Egyptians should apply the formula in order to attain their desired goals and common welfare. Main ingredients of that formula were: passionate optimism, attraction to science, love for work, respect for others, personal contentment, and team effort (Zewail pp. 233-236). Zewail drew to a close for his formula by concluding that: "we must have a dream, if we are to cross the boundaries of the ordinary".

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