

## **DIVERSITY AND HISTORICAL PROCESSES IN HUMAN DEVELOPMENT**

**Ismail Sirageldin**

*The Johns Hopkins University, USA*

**Keywords:** Diversity, differentiation, views of nature, historical processes, history of the present, demographic transitions, Capabilities, ecological scale

### **Contents**

1. Introduction
  2. Historical roots of diversity
    - 2.1 Optimists versus pessimists: a dialogue
    - 2.2 The danger of teleological explanations
    - 2.3 Scientific development and views of nature
    - 2.4 Impact on the global environment
  3. Human diversity in recent times
    - 3.1 Demographic and Capabilities Diversities
    - 3.2 Diversity in Resource Endowments
  4. Concluding remarks
- Acknowledgements  
Glossary  
Bibliography  
Biographical Sketch

### **Summary**

The essay is divided into two parts: conceptual and factual. A conceptual review of the historical processes that led to the present state of human diversities and differentiations has not been optimistic. Technological changes, especially those associated with the industrial revolution that started three centuries ago, promote new knowledge and technological achievements that enhanced material progress and human development for large segments of the world populations. It also introduced severe socioeconomic inequalities and poverty to major population groups and regions. Scientific and technological developments also introduced new views of nature that, in many cases deepened inequalities and diversities. Historical processes are also reflected in long-term demographic trends that deepen diversities and socioeconomic inequalities especially in the distribution of skills and capabilities that reduce the potential for human development for a large segment of humanity. There is room for optimism, however. Negative trends are slowing down or checked, while technological advances provide promise for enhanced food production at lower resource use. But for the majority of humanity, the central challenge remains unanswered: namely, how to reach a sustainable level of development? For more than three decades, the development establishment has been occupied in efforts and programs around the world to enhance human capabilities, opportunities and the overall quality of life. Yet, views and paradigms about development processes and strategies have changed little, if any, even while the world system and its political and technological bases have changed

dramatically. Also unchanged are the marginal conditions of human life in most of the developing countries, especially the least developed. A large component of human diversity is both negative and a result of historical processes and trends that require careful assessments and changes in present approaches to human development based on a new vision for global governance. Without a global value system, the fate of the majority of humanity will be relegated to persistent poverty and lack of freedoms, the essay concludes.

## 1. Introduction

*The present, for all its awesome importance to us who chanced to dwell in it, is only a random point in the long flow of time (p.13).*

*This extraordinary fact, that none of the basic types has become extinct bothered Sigmund Freud, who could not see why all ancient forms have not yielded to a death wish, and it has bothered some others who feel that progressive evolution should imply constant replacement of all lower forms of life by higher (p. 19).[George Gaylord Simpson 1949]*

The evaluation of prospects and challenges for human development in the 21<sup>st</sup> Century requires an assessment of the human capacity to adapt to fast changing technologies, increasing private and public risks of exogenous shocks and mounting environmental constraints. Meanwhile, the evolving environment of population growth and scarcity requires the ability of human societies to set common goals to preserve the global 'commons', accept diversity and cooperate as a global family. The question is whether the emerging global society is distancing itself from the mechanisms of the pre-symbolic age of the organic evolution, at which time conflict and dispute resolution were brought about through irrational force and violence, and moving towards the means of the symbolic cultural evolution, based on reason and rationality—guided by a globally recognized Rule of Law and the ideal of Isonomy? The question is fundamental, since in its root is the presence of a dominant culture that rejects diversity and has a teleological view of historical processes. But progress is impossible without change based on assessing the shortcomings of the present in terms of past circumstances, and change is impossible without variation. We can therefore expect neither biological nor social progress unless we tolerate human differences both in physical type and in personal and social ideas.

There is no clear answer to this fundamental question. Part of the difficulty, aside from the search for an acceptable definition of the term progress, is the presence of socioeconomic differentials in capabilities and resource endowments. These differentials are the outcomes of technological developments, changing views of nature, and social processes in the evolution of human societies. There is, in the present context, a difference between differentiation and diversity. The latter evolves more slowly and naturally in the course of the adaptive processes of the organic evolution, and not necessarily a result of human design. On the other hand, human nature seems to have acquired a tendency for classification, inherited from Aristotle—partly transformed by Plato's concept of eides [Eides refers to Plato's famous cave allegory according to which reality is only seen indirectly. The real nature of things—its essence is never revealed directly, accordingly the

essentialism view of nature. When combined with Aristotle's classifications, a system of taxonomy tends to become part of the view of nature.]—that, has the potential to convert a natural and apparently neutral processes such as diversity, into a value-laden process of differentiation with negative socio-political consequences.

The remainder of the present essay is divided into two main parts: conceptual and applied. In part 2, we examine the roots of diversity and speculate as to how supportive is the evolving global value system to human development in the 21<sup>st</sup> Century? First, the contrast between the optimists and pessimists' views is presented. This is followed by stressing the danger of teleological explanations, especially when used as guide to socio-political policies. The role of knowledge and technological development is then examined. For many centuries, science has been the main engine of growth and development. Those who know more have better use of resources, better chances for survival and development, and, more essential, more control on the destiny of others with less knowledge, although the latter have the potential to join and contribute to scientific development. But scientific development introduces new views about nature that historically sanctioned injustices. Without a global value system, the fate of the majority of humanity will be relegated to persistent poverty and lack of freedoms.

Meanwhile, the world is changing rapidly in scientific development and material substance—changes that influence and, in turn are influenced by the prevailing view of nature and the associated value system. It took from the dawn of history to the beginning of the twentieth century for the world economy to grow to \$600 billion. Now it increases by more than that in less than two years and the basic forces of this material growth are advances in scientific knowledge, population growth, technological innovations, institutional development, and other factors including questions of equity and sustainable natural resources, that impact welfare outcomes. This accelerating material growth has not been without ecological and welfare cost, especially in increased differentiation and inequality among individuals and groups. There are three basic processes that are related to these mixed and tangible outcomes: demographic developments, diversity in resource endowments, and the distribution of income and capabilities.

In Part 3, the discussion moves from the conceptual analysis of diversity and historical processes to their tangible impact on the present status of humanity. First, the role of population dynamics and the distribution of capabilities in human development are examined. There are at least three reasons for this initial focus. The first is that population change is not independent of historical and evolutionary processes. Present diversities in demographic structures tend to reflect socioeconomic and political differentiation. Second, the consequences of population growth, age structure and spatial movement play a pivotal role in development by shaping the fate of natural resource endowments and development prospects, directly and indirectly through externalities that radiate to regional and global levels. The third is that initial resource endowment and the processes of development and their outcomes in turn, shape these population structures. These three, mutually constitutive dynamics generate the forces leading to resource scarcity and differentiation in capabilities and life chances, yet, if clearly understood, also point to their potential solutions. This is followed by a brief discussion of diversity and sustainability of resource endowments, exemplified by the

case of water and food. The essay ends with brief remarks about the future of human development in the 21<sup>st</sup> Century.

## **2. Historical Roots of Diversity\***

[\*This section is indebted to the contributions of Ibn Khaldun (1377/1967 Frankfort, Frankfort, Wilson and Jacobsen (1949), G. G. Simpson (1949/1956), Derry and Williams (1960), Barbu (1971), Foucault (1972), Stebbins (1982), Straus (1989), Davies (1993), Diamond (1997), Mayr (1997), Rifkin (1999), Siralgeldin (2001, 2001B), and the contributions of Kantner, Mitias, and El-Imam to the UNESCO-EOLSS (HD 2002), among others. A fully referenced draft is available from the author.]

The question as to whether the emerging global society is moving towards reason and rationality, guided by a globally recognized Rule of Law and the Ideal of Isonomy is a debatable question with optimists and pessimists providing answers that lie on opposite poles of the spectrum. It is instructive to observe that the present phase of human evolution is guided by the interaction of two types of evolutions—not necessarily in harmony—neither in mechanism nor in direction: organic and social evolutions. Organic evolution also labeled biological or materialistic rejects acquired characters in inheritance as part of its adaptive mechanism. Its adaptation depends basically on orienting the essentially random, non-environmental interplay of genetical systems. It is limited in its spread in both space and time because of its inflexible system of proximity and the necessity of continuity. However, we should observe, as many biologists and evolutionists have informed, that, like human laws, the “Laws” of evolution are not divine and are often broken or even reversed. Indeed, they are human constructions which science impose as a theoretical premise on the complex phenomena of nature and which nature is under no obligation to follow. It is known that, in his analysis, Darwin emphasized the role of both chance and design in the adaptation processes: the variability of the gene pools is subject to chance, while the molding of this highly variable gene pools is the product of natural selection. As Mayr (1997: 43) put it: “The solution of Darwin’s paradox is that natural selection itself turns accidents into design.” Evolutionary biology does not possess the theoretical framework of physics with its goal of establishing general laws and reduce all phenomena to a minimal number of such laws, since the presence of heterogeneity in groups, individuals and down to the level of DNA; and in development patterns and in rates of change is the common order in living organism. It should be evident that the presence of such uncertain outcomes should be truer in the case of the new social evolution, being less material in structure and subject to greater chance variation. Care needs to be exercised when using analogies between the two types of evolutions, e.g., social biology, since their structures and evolutionary dynamics are basically different.

The more recent evolution peculiar to the present phase of humanity—labeled by many as the Symbolic Cultural Evolution and more recently, the Techno-physio Evolution—operates directly by the inheritance of acquired characters, knowledge and learned activities, which arise in and are continuously a part of ever-evolving systems of technological innovations and social organization. The inheritance of learning was initially limited in scope and space, similar to the case of the organic evolution, and still

is in all the lower animals, not subject to the new social evolution; but in modern human it has escaped these limitations. New means for recording and transmitting knowledge, external to the organism have been devised, by graphic methods, at first, and then by recordings of several other types and by wire and wireless transmission, and by more forthcoming advances in communication technologies. In the new Symbolic Cultural Evolution, present generations can inherit directly from ancestors dead many millennia back or from their organic kin in far away distances, instantaneously, and with the potential to spread the inheritance to the whole human species. This potential is new. It has never been realized before, yet it is the outcome of the new evolution, and when combined with advances in neuroscience and biotechnology that presents opportunities for control over the structure and direction of the organic evolution, its outcomes will have significant consequences to human development, that are yet to unfold—with optimist and pessimist presenting different scenarios (see chapter *Impact of Neuroscience in Human Development*). A major source of future uncertainties is that advances in science and technological innovations introduce disruptions in the social system that require changes in views of nature and in social organization that could be beyond the adaptive capacity of these institutions. This is the case, since scientific and technological developments impact, and in turn being impacted by the basic tenants of the social system: personality, society and culture. These three concepts, their synergies and dynamics, represent a fundamental triangle that influences the evolution of human development. A full analysis of these dynamics, although desirable, is beyond the scope of the present discussion (cf. Barbu 1971, and Siralgeldin 2001 and references cited). In the rest of this part we examine the basic issues in these developments and consequences, and the divergent evaluative views.

## **2.1 Optimists versus pessimists: a dialogue**

As mentioned above, the answer to the question of whether the emerging global society is moving towards reason and rationality in conflict resolution, or resort to the pre-symbolic response of irrational force and violence, is highly complex and debatable. There are historical and unsettled philosophical issues underlying that debate. We hope that by contrasting these divergent points of views, the issues may gain clarity. There are, for example, optimists who feel that human societies are increasing their ability to chart and follow a purposeful course of change towards a better life for all, a course in which diversity is welcomed and historical lessons are positively interpreted to provide for better future guidance for equitable development and sustainable environment.

Optimists, however, are balanced by an equal, if not larger number of pessimists who believe that the inexorable laws of 'nature and evolution' will eventually override purpose and cause the human species to decline and disappear, as other animal species have done in the past. As we begin to approach the earth's carrying capacity we severely limit our room for maneuverability in response to change—limits that enforce our species' natural tendency for non-cooperation, violence, irrational values and unconscionable behavior. As population density intensifies, humans invent new paradigms or 'world views' that legitimize unjust actions and behavior. Teleological explanations, such as the "End of History," "Eugenics," "Clash of Civilizations" or even the "End of the Fertility Transition," portray contemporary inequities as the inevitable result of the 'final cause' or as the ultimate purpose of human history—a view that leads

the majority of humankind to a state of perpetual poverty, violence and despair. Today, teleological explanations prevail and guide policies and actions, some of which are not necessarily rational and could be harmful when examined in the light of earlier circumstances or causation.

For the pessimists, the turbulent events that beset the twentieth century exemplify their view about human nature. As the 20<sup>th</sup> century dawned, in 1907 to be precise, Governor von Götzen concluded that a famine would flush out the rebels in his Province of occupied Tanganyika as only hunger and want could bring about a final submission. It was done. Three German columns advanced through what was then the German East African Colony, pursuing a scorched-earth policy that left famine in its wake. People were forced from their homes, villages were burned to the ground and food crops that could not be taken away or given to loyal groups were destroyed. Testimonies and evidence brought to light in the 1960s suggest that most of the 250,000 to 300,000 people—about one-third of the total population—who died as a result of this policy succumbed to starvation (Reader: 595-601). They were not, however, considered victims. They were viewed as savages in keeping with the conviction of the time. This violent behavior, and its associated classification of humans into higher and lower orders, continued unabashed throughout the century and beyond, with two World wars, numerous regional and local brutal wars and conflicts, and many other known inhumane crimes and atrocities that continue through the present time. [There are many examples of recent attempts to resolve conflict through brutal force rather than reason. The following are illustrative: the case of Apartheid in South Africa, its long-term racist atrocities and final resolution is well known and requires no further elaboration; the ethnic Bosnia war, illustrated in the Dutch government-commissioned, 7,600-page report by the Netherlands Institute for War Documentation (2002); the September 11 (2001) suicide attacks in the USA and the US military and political global response that followed; or the 50-year Israeli-Palestinian conflict and its atrocities, illustrated by the recent Israeli assault on the Jenin Palestinian refugee camp (April 2002, quoted in The International Herald Tribune (April 17, 2002: pages 1, 4 & 7). Most of these conflicts reflect struggles of populations seeking their freedom and basic rights for self-preservation—a right Hobbes regarded as absolute [see the discussion of Hobbes below]].

By the end of the 20<sup>th</sup> century, science provided technological innovations that contributed to both human comfort and the development of deadliest weapons of mass-destruction that was ever invented, and humans never hesitated to use both, especially the latter whenever the existing powerful feel threatened or angry. Just like the ancient Mesopotamian myth when the “gods,” who believed that they represent order in the world, hear that all the forces of the past, of the original chaos, or the terrorists in modern terminology, are making ready to do battle with them, they get ready to battle. First, they look back, with dissatisfaction to the past and feel proud of their achievements, certain of the superiority of the present and confident in their control of future *progress* and in the fulfillment of what they consider their destined role in guiding the world towards a final cause. Accordingly, they justify their deeds regardless of the legitimacy of the means they use. But in the process, they lose rationality and forgot that they wrote the original myth, designed the patterns of its diversity, and that their culture is a result of historical processes of *cultural diffusion*. In that Mesopotamian myth, the ‘gods’ become:

*Angry, scheming, restless day and night,  
they are bent on fighting, rage and prowl like lions.  
Gathered in council, they plan to attack.*

*Mother Hubur – creator of all forms –  
adds irresistible weapons, has born monster serpents,  
sharp toothed, with fang unsparing;  
has filled their bodies with poison for blood.  
Fierce dragons she has draped for terror,  
crowned with flames and made like gods,  
so that who ever looks upon them shall parish with fear,  
and they, with bodies raised, will not turn back their breast.*  
(Frankfort et. al.: 190)

Underlying this Mesopotamian tale is the belief in “the historical process,” meaning that these processes are *the* justification and guarantee for their mission to succeed in the actualization of the better life. But historical trends are ambiguous in providing a standard of moral values or certainty of outcomes. The present, to an outside observer seems to be an age of science and myth, a mixture of rational and irrational behavior, or, according to Strauss (1989:227-270) an age of unfinished dialogue between reason and revelation. A recent statement by Sen. Bob Graham, Chairman of the US Senate Intelligence Committee, discussing President Bush proposal for a domestic security agency, a fallout of September 11, 01 incidence (see Fn. 3), illustrates the concern with using religion as a tool for political ends: “If the administration takes the stonewall position that every word in their plan is biblical and if you change it you’re unpatriotic, I think that will be a very serious error” (*The Baltimore Sun*: Monday, June 10, 2002: Page 3A). But the inner motive behind human aggression seems to persist: human greed to control the earth's strategic resources, a greed that breeds aggression.

Pessimists view the goal of sustainable human development as unrealistic. To regard societies as one family and enhance the quality of life for all its members by providing good health, equal access to knowledge and education in the context of equitable and dignified treatment of all individuals and societies is a recent objective—and not one that is universally shared. That goal has no parallel in the history of human evolution. Human evolution has been characterized mainly by ruthless competition, non-cooperative behavior and socioeconomic outcomes that produced glaring inequalities and indifference, yet, in the realm of the evolutionary paradigm, are championed as the source of the human race’s vitality—survival of the fittest, while a majority of the human race are either eliminated or reduced to a state of bare survival. A state that does not provide for positive promise for human development even if some moral philosophers have written that man’s hands and tongue, two most noble instruments for ennobling him, would not have done their work perfectly nor would they have carried the works of men to the height to which they are seen to have been carried, if they had not been driven on by necessity. As Strauss (1989: 21) pointed out, the jump from the realm of necessity into the realm of freedom will be the inglorious death of the very possibility of human excellence.

Optimists feel, however, that this crude Darwinian scenario, which foresees human extinction similar to the fate of many other species, is not an inevitable destiny. Reason, according to this view, will prevail. As we enter the 21<sup>st</sup> century, it is becoming evident that the global system, including its natural environment, is fragile and increasingly linked as both the present and future fortunes of any given society depend on the actions

and fortunes of others. But fragility and reduced maneuverability do not necessarily signal the continuation of selfish and aggressive genes. Rather, human survival calls for a new social contract, which will bind the global system, accept cultural diversity, and seek peaceful means for conflict resolution—a clear prerequisite for sustainable human development in the 21<sup>st</sup> Century. This universal social contract appears to evolve, if at a slow and reluctant pace. There are cultural, economic and technological causes for such reluctance if not reversal, that need to be addressed. Teleological views of nature, whether Hegelian or Rousseauian or Aristotle’s final cause, when used to justify economic or political ends regardless of its righteousness and deepen inequities among social or cultural groups, need to be clarified and its foundation assessed.

-  
-  
-

TO ACCESS ALL THE 30 PAGES OF THIS CHAPTER,  
Visit: <http://www.eolss.net/Eolss-sampleAllChapter.aspx>

### **Bibliography**

Ali, A.A. and I.A. Elbadawi (2002 Forth coming). “Poverty in the Arab World: The Role of Inequality and Growth,” in I. Siralgeldin (Ed.), *Population Challenges in the Middle East and North Africa: Towards the 21st Century*. London, UK and Cairo, Egypt: I.B. Tauris (UK) and AUC Press (Cairo).

Barbu, Zevedie. (1971). *Society, Culture and Personality*. New York: Schooken Books (183 pages). [One of the few books that examines the three general concepts of sociology: society, culture and personality with clarity without losing theoretical depth and historical content].

Bongaarts, John (2001). *The End of the Fertility Transition in the Developed World*. Working Paper, 2001, No. 152. New York: Population Council. (32 pages).

Bruzonsky, Mark (2002). Keynote Address, University of Chicago Model United Nations - Palmer House Hilton Ballroom, 31 January, Chicago, Ill.

Davies, Paul (1992/93). *The Mind of God: The scientific basis for a rational world*. New York: Touchstone (254 pages). [A tour de force, tracing the development of views of nature through scientific developments, mainly in physics and mathematics, by a notable physicist].

Derry, T.K. and Williams, Trevor I. (1960). *A Short History of Technology: from the earliest times to A.D. 1900*. New York: Dover Publications (782 pages). [An indispensable reference for the historical development of technology. It illustrates how civilizations are linked over many millennia through the transfer of inventions and technology].

Diamond, Jared. (1999). *Guns, Germs, and Steel..* New York: W. W. Norton & Company (480 pages). [A well documented account of the rise and fall of civilizations as they interact with their environment].

Eatwell, John and Lance Taylor (2000). *Global Finance at Risk: The case for international regulation*. New York: The New Press (258 pages). [One of the best concise and readable account of the economics of globalization and its evolving financial system. The authors call for a new global regulatory agency].

Frankfort, Henri, Frankfurt, Mrs. Henri, Wilson, John A., Jacobsen, Thorkild. (1951). *Before Philosophy*. Harmondsworth, Middlesex: Penguin Books (273 pages). [An excellent account of mythology in ancient Egypt and Mesopotamia. It reads like a living history].

Foucault, Michel. (1971). *The Archaeology of Knowledge & the Discourse in Language*. New York: Pantheon Books (245 pages). [One of the best illustrations of Foucault influential work on the meaning and philosophy of historical processes].

Gleick, Peter H. (1997). "Human Population and Water: Meeting Basic Needs in the 21st Century," in Pachuri, R.K. and L. F. Qureshy (Eds. 1997). *Population, Environment and Development*, New Delhi: Tata Energy Research Institute.

Gutting, Gary (ED. 1994). *The Cambridge Companion to Foucault*. Cambridge, UK: Press Syndicate of the University of Cambridge (360 pages). [Highly recommended to understand Foucault views].

Hawking, Stephen W. (1988). *A Brief History of Time*. London and New York: Bantam (212 pages). [A classic about science and nature].

Hayek, F. A. (1955). *The Political Ideal of the Rule of Law*. National Bank of Egypt: Fiftieth Anniversary Commemoration Lectures. Cairo, Egypt: National Bank of Egypt (75 pages). [An original and accessible statement about democracy, freedom and the Rule of Law by one of its outstanding authorities].

IBN Khaldun. (1377/1967). *The Muqaddimah: An Introduction to History*. London: Routledge and Kegan Paul (465). [Claimed to be to originator of scientific history and sociology, a classic].

ILO (2001). "The Digital Divide: Employment and Development Implications," Special Issue, *International Labor Review*, Volume 140, No. 2.

Mayr, Ernst (1997). *Evolution and the Diversity of Life: Selected Essays*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press (721 pages). [An important collection that introduces the thought of a major biologist and evolutionist].

Morici, Peter (2002). *Reconciling Trade and the Environment in the World Trade Organization*. Washington, DC: Economic Strategy Institute (130 pages). [An introduction about environment-environment trade-offs in the global system].

Pangle, Thomas L. (1989). "Introduction." In Leo Strauss (1989). The essays were selected by Pangle. [Pangle's introduction to Strauss thought is masterly and so is his selection of Strauss essays].

Reader, John (1997). *A Biography of the Continent Africa*. New York: Vintage Books, A Division of Random House, INC. (802 pages). [An indispensable reference for the history of Africa].

Rifkin, Jeremy (1998). *The Biotech Century: Harnessing the gene and remaking the world*. New York: Penguin Putnam Inc. (272 pages). [An informative and challenging account of the future direction of biotechnology].

Russel, Bertrand (1945). *A History of Western Philosophy*. New York: Simon & Schuster, INC. (895 pages). [A classic].

Sirageldin, Ismail, (2002). "Population Challenges for the 21st Century in the MENA Region: Introduction to the Issues," in Sirageldin, Ed. *Population Challenges for the 21st Century in the MENA Region*. London, UK and Cairo, Egypt: I.B. Tauris (UK) and AUC Press (Cairo).

----- (2001). "Sustainable Human Development in the Twenty-first Century: An evolutionary perspective," in UNESCO-EOLSS, 2001: 695-721. Also, a slightly edited version of the article will be available as a background document for the World Summit Conference in Johannesburg, August 2002.

----- (2001b). "Culture and Development in the Arab World." Public Lecture, Arab Planning Institute, Kuwait, October 2, 2001 (in Arabic).

----- (2000). "Elimination of Poverty: Challenges and Islamic Strategies." *Islamic Economic Studies*, Vol. 8, No. 1, October: 1-18.

----- (1998). "Globalization, Regionalization, and Recent Trade Agreements: Impact on Arab Economies : Rapid exogenous change -- Slow endogenous Response." In A. Al-Kawaz (Ed.), *New Economic Developments and their Impact on Arab Economies*. Amsterdam: North Holland:15-56.

----- (1996). "Population Dynamics, Environment, and Conflict," In Sirageldin and Al-Rahmani (Eds.) *Population and Development Transformations in the Arab World*, Greenwich and London: JAI Press Inc.: 185-217.

Sirageldin, I. and S. Serageldin (2002). "Global Interdepe

ndence, Privatization of Risk, and Human Insecurity," in UNESCO-EOLSS *Encyclopedia of Life Support Systems*. Oxford and Paris: EOLSS (Forthcoming and also available on the WEB).

Simpson, G. G. (1956). *The Meaning of Evolution*. New York: Mentor Books (192 pages). [A classic].

Squire, Victor (2001). "The Role of Food, Agriculture, Forestry, and Fisheries in Human Nutrition," in UNESCO-EOLSS, 2001: 563-577.

Stebbins, G. Ledyard (1982). *Darwin to DNA, Molecules to Humanity*. San Francisco: H. W. Freeman and Company (491 pages). [A classic].

Strauss, Leo. (1989). *The Rebirth of Classical Political Rationalism: Essays and Lectures by Leo Strauss*. Chicago: University of Chicago Press (285 pages). [A thought-provoking collection of Strauss thought. Indispensable for understanding political rationalism].

Swaminathan, M. S. (2001). "Sustainable Food and Water Security," in UNESCO-EOLSS, 2001: 579-597.

United Nations Development Program (UNDP) (1999). *Human Development Report 1999*. New York: Oxford University Press, For the UNDP.

United Nations Population Division (2002). *World Population Prospects: The 2000 Revision*. New York: United Nations.

UNESCO-EOLSS (M. K. Tolba, Ed., 2001). *Our Fragile World: Challenges and Opportunities for Sustainable Development*. Forerunner to the *Encyclopedia of Life Support Systems*. Oxford and Paris: EOLSS-UNESCO.

West, David (1996). "The Contribution of Continental Philosophy," in Robert E, Goodin and Phillip Pettit (Eds.), *A Companion to Contemporary Political Philosophy*. Oxford, UK: Blackwell Publishers. [An excellent review].

### **Biographical Sketch**

**Ismail Sirageldin** is Professor Emeritus at the Johns Hopkins University. He has been professor of population dynamics, economics, and international health. He is also a fellow and member of the Board of Trustees of the Economic Research Forum for the Arab Countries, Iran, and Turkey (ERF). Professor Sirageldin's major research and professional interests are in the interrelations between population dynamics and human resource development, environmental consequences of population change, and food policy analysis. He has consulted to various national and international organizations and governments, and served as a chairman and member of various employment, health, education, and human resource missions in the Arab region and around the world. Professor Sirageldin served as Chief Advisor for the Pakistan Research and Evaluation Center; Senior Scholar, UN Cairo Demographic Centre; Senior Advisor, Kuwait Institute for Scientific Research; member of the WHO International Advisory Committee on Health Statistics; the World Fertility Survey; and member of the UN/IUSSP Committee on the Evaluation of the Fertility Impact of Family Planning Programmes. Professor Sirageldin has written numerous articles, chapters, books, and book reviews on economic development and population

dynamics. In 1978, he founded *Research on Human Capital and Development* and acted as its series editor. The series produced twelve volumes including *Population and Development Transformation in the Arab World* (1996), and *Models for Economic Policy Evaluation, Theory and Practice: An International Comparison* (1997). He edited and contributed to a book on *Population Challenges in the Middle East and North Africa: Towards the Twenty-first Century* (2002), and editing the theme on Sustainable Human Development for the UNESCO *Encyclopedia of Life Support Systems*. Currently, Professor Siralgeldin is writing a book on “*Development and Human Nature*”.

UNESCO – EOLSS  
SAMPLE CHAPTERS