Chapter III
The Civilization Index

INTRODUCTION

The purpose of this chapter is to define energy levels of civilizations, particularly in respect to a role of information-communication processes. Rapid changes in the world economy and social structure have brought into question traditional assumptions, prompting some intellectuals to speak of a “clash of civilizations” (Huntington, 1993; 1996) or even “the end of history” (Fukuyama, 1989; 1992). Before one can speculate about a new world order, it is necessary to develop an appropriate set of measurements to compare human societies and a terminology to describe them. The environment described as a “civilization” by Toynbee (1995) and “the world civilization” by Braudel (1993) has changed so drastically that those definitions are no longer sufficient.

The spectacular progress in technology and social life that has been achieved at the beginning of the third millennium stimulates an extensive investigation into the human condition and the world status. Questions like the following need to be answered:

1. What is the state of Western and other civilizations at the beginning of the 21st century?

2. How can it be compared to other civilizations in terms of level of development?

3. What criteria and measurements should be applied in evaluating and comparing civilizations?

4. What is the relationship between a given civilization and the world civilization?

This study falls into a category of wide-ranging comparisons of large structures and processes, in order to understand how human entities behave in a certain way because of the consequences of the civilization system’s behavior as a whole (Tilly, 1984).

THE NEXT ENTITY TO MEASURE

Several attempts to measure civilizations’ vitality have been undertaken. Most of these studies were conducted at the level of the development of regions over several millennia. Kroeber (1944) counted “geniuses,” whom he defined as “superior individuals” whose superiority had been established by a consensus of encyclopedia and textbook authors. He counted them in seven disciplines: philosophy, science, grammar (philology), sculpture, painting, drama, and literature, through the 59 centuries from 4,000 B.C. to 1,900 A.D.
He found 5,323 geniuses; of whom 56% were from Europe, 11% from the Far East, 3% from India, 8% from the Middle East, and 22% from elsewhere (assuming 50% of it from America). Hence, one can assume that about 67% of geniuses were “generated” by the Western civilization. According to Kroeber, the Middle East provided the overwhelming majority of geniuses from 3,000 to 800 B.C. Then Europe took over the supply until 500 A.D., followed by the Far East for a few centuries. The Middle East prevailed for a few centuries, to pass the leadership to Europe since the 12th century. He stopped counting at 1,900 A.D., so “geniuses” from the U.S. in the 20th century are not included, but certainly they received the most of the Nobel Prizes.

Sorokin (1937) provided a count of historic persons, scientific discoveries and technological inventions only in the scope of “Europe” and the “rest of the world.” Naroll, et al. (1971) assumed implicitly that creativeness and civilization were synonymous terms, or at least indicative of each other (Eckhard, 1995).

Taagepera (1978) measured imperial systems of Africa and Eurasia in terms of their areas in square megameters, one square megameter equaling 386,000 square miles. Until 600 B.C., empires were small. Later, when the Medes and Persians invented more effective hierarchical bureaucracy, the sizes of empires grew. There was a leap in average size after 1,600 A.D., influenced by the European trade-industry-transportation and communication revolutions. This progress of empires in the world is meaningful. In the 6th century B.C., they covered only 6% of the earth’s surface; in the 20th century their coverage grew to 95%.

Several researchers measured the number of wars (battles) and number of deaths caused by them. Measurement of battles reflects the intensity of wars as a synonym of civilization. Dupuy and Dupuy (1986) recorded 4,511 battles (29% in Europe) in the last 3,500 years.

Eckhard (1995) correlated geniuses, civilizations, empires, and wars at the global and regional levels of analysis and found that the more civilized we became, the larger was the area of the earth that came under imperial control. Empires were spreading civilization over larger territories (e.g., Poland, the largest state in 16th century Europe, was civilizing the east in the 16th-17th centuries; the United Kingdom was civilizing its colonies in the second part of the second millennium A.D. He concluded that the relations between civilizations, empires, and wars is such that these three interact in such a way that “promotes” each other’s growth up to a point where surplus wealth diminishes and turns into a deficit. At this point, civilizations, empires, and wars cannot be afforded anymore, and they fall, as is exemplified by the failures of the Persian, Chinese or recent Soviet empires.

In conclusion, one may notice that measuring civilizations should lead to answers why civilizations “rise” and “fall” and whether can we develop civilization without wars by reinventing our values.

THE ARCHITECTURE OF A CIVILIZATION

Civilization is an “interface” that differentiates humans from animals in dealing with nature and the creator (Big Bang or God, according to one’s beliefs). In the general model on Figure 1-5c, one may recognize the following components of a civilization (Targowski, 2004a):

- **Human Entity**: an existence-driven community, being a member of a given civilization
- **Culture**: a values and symbols-driven, continuous process of developing patterned human behavior
- **Infrastructure**: a technology-driven, additive process of acquiring and applying material means
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