

World History and Societal Evolution. The Link between Historical Epochs and Psychological Stages

Historical research is combined to developmental psychology and Piagetian Cross-Cultural Psychology. It will be shown that the empirical data that evidence greater psychological differences between premodern and modern peoples can be applied to the study of history generally. The differences regarding mind, language, worldview, religion, literature, and sciences between nature peoples, archaic kingdoms, ancient civilizations, and the modern industrial society can be connected to certain and evidencable psychological stage differences. Data are presented that reveal continuous psychological stage development through the four historical epochs. Ancient Egpy lies in the middle between nature peoples and post-axial civilizations, in terms of developmental stages. The post-axial civilizations again are more developed than the archaic kingdoms but less than the modern, industrial civilization. This psychological view on development can in a certain way foster that impression researchers can have when comparing these cultures even without developmental psychology. Notwithstanding, the developmental approach revolutionizes the study of history.

Keywords: Developmental stages; nature peoples; archaic kingdoms; ancient civilizations; modern, industrial civilization

Introduction

Since the age of Enlightenment, authors of several disciplines have maintained or described that the human race have been attaining higher psychological stages during history. More, it was written that these psychological advancements have caused and steered cultural stages and breakthroughs. This discussion, opened by authors such as Lessing, Condillac, and Condorcet, later on followed by Comte and Feuerbach, reached a new level as child and developmental psychologists entered the stage and started to contribute, namely in the time after 1880. Romanes, Schultze, Werner, Lombroso, and especially Piaget paralleled historical periods and psychological stages, the latter one observable in ontogeny. In more recent times, Ibarra, Habermas, Ziégler, Gablik, LePan and some more contributed to that research field.

The article shows that psychological stage development has actually occurred from nature peoples over pre-axial archaic kingdoms (such as Egypt or Mesopotamia) and post-axial civilizations (such as the Roman or Chinese Empire) to modern, industrial civilization. Of course, history can be divided in more historical periods than only in these four. However, it can be evidenced that psychological stage developments have been progressively taken place through these four historical periods. Especially, the history of language, mind, mythology, worldview, literature, science, and religion will be scrutinized.

Developmental and Historical Psychology

Some historians, especially during the 19th and early 20th century, emphasized that history can only be understood in the light of a true theory of the human being. Likewise numerous authors, representing a wide range of other disciplines, maintained that the changing structures of the human being in history have caused or influenced the entire course of history. A great many of them described that the premodern or archaic human being shared central patterns of mind and behavior with children, while the stepwise psychological maturation manifesting in those sequential generations of humans living in modernizing and industrializing nations be a source or a causer to the rise of the modern world.¹

Further, almost every (!) founder or early representative of child or developmental psychology described similarities between children and premodern or archaic adults, among them W. Stern, G. S. Hall, M. Lombroso, A. F. Chamberlain, H. Wallon, J. Piaget, and H. Werner. Especially Werner and Schultze described these similarities regarding a wide range of psychological life and world understanding, coming near to the conclusion that premodern humans might stay on the same psychological stage as children do. Jean Piaget, the most distinguished child psychologist in history, did the most in the dissemination of this research, describing the similarities in most of his books. He discovered these correspondences regarding logic, physics, worldview, religion, social affairs, morals, law, and politics. However, he dedicated a central monograph regarding these parallels only to the history of sciences.²

According to Piaget, human development unfolds in four psychological stages. The sensorymotor stage of the suckling is followed by the preoperational stage of the child. During this second stage, running from 18 months to six or eight years roughly, the child acquires language, reason, anticipation, and memory. The child this stage lives in a fairy tale world, in a world of magic, monsters, witches, mysteries, myths, and physical impossibilities. Piaget himself already recognized that this stage characterizes the psychological life of the greatest part of the premodern humankind. The third stage, that of the concrete operations, unfolds in the child between six and 12 years of age. It dwarfs the magical-animistic patterns in the child in favor for more rationality. According to Piaget, the Ionian philosophers were the first to establish this stage in history. The fourth stage, that of the formal operations, is established by the adolescent stepwise during the whole second decade of life. This stage gives birth to reasoning capacities leading to science and humanity, to logic and rationality, and to higher forms of morals and political understanding. This stage destroys the mental world of the child and establishes that of the civilized adult. Piaget repeatedly remarked that the fourth stage came into being first among the scientists of the 17th century, spreading from there to the whole population living in modern societies.³

¹ Elias 1982; Frazer 1927; Schneider 1909; Schultze 1900.

² Piaget & Garcia 1989.

³ Piaget & Garcia 1989; Piaget & Inhelder 1969.

For roughly 80 years now, Piagetian Cross-Cultural Psychology has been conducting empirical research among peoples living in different cultures and regions right across the globe. It was found that peoples living as hunters and gatherers, in traditional peasant societies, and in developmental regions within the developing nations, do not establish the adolescent stage of formal operations. They either stay on the preoperational stage only, or on stages mixed by the preoperational and concrete operational stage. The more traditional or archaic the style of life is the more such peoples strictly stay on the preoperational stage. Conversely, only peoples living in modern, industrialized nations are characterized by the formal operational stage.⁴

These results have been gained concerning every race, nation, culture, and continent. Therefore, the causes to the divergences cannot be biological factors but must be cultural ones. Some kind of dialectics between cultural factors on the one hand and developmental stages on the other hand must be the cause both to stagnations within premodern societies and higher developments in modern societies.

The fact of the similarities cannot be surprising to all those researchers knowing well especially ethnographic literature. Everything that ethnography has been detailing regarding mind and worldview of archaic peoples perfectly matches to the traits of the preoperational stage.⁵

Piagetian research found the similarities likewise regarding the whole range of mind and world understanding such as logic, physics, worldview, religion, philosophy, sciences, law, morals, politics, and social affairs. Every trait or pattern describing the preoperational stage is also the main trait of the premodern adult. Intellectuals or advanced persons of the agrarian civilizations may manifest patterns to find in intermediary stages but they do not establish fully developed formal operations. Therefore, the conclusion is that children and premodern adults share the same psychological stage structures but differ only in life experience and amount of knowledge (that knowledge that does not depend from stage structures). Therefore, premodern and modern adults diverge in 5, 10, and even more developmental years.⁶

This is the greatest discovery ever made in the history of the human and social sciences.

Some critics objected a child (and an adult staying on this stage) could not lead a life as hunter and gatherer, or as nomadic or peasant. They said that despite some true correspondences between the two groups there must be space left for premodern human being to attain adult stages, namely higher stages regarding abilities he needs for his daily life. However, there is no empirical research that supports such a view. Therefore, to know fishing, hunting, farming, warfare, etc. in their premodern forms does not require the acquisition of the third or the fourth stage. Consequently, the sometimes tremendous abilities of the premodern human being originate in the fact that he stays for many years on the stage of the child. His many shortcomings, however, root in his childlike psychological stage. Staying on the children's stages for many

⁴ Dasen & Berry 1974; Dasen 1977; Luria 1982; Piaget 1974.

⁵ Evans-Pritchard 1976; Fortune 1963; Frazer 1994; Griaule 1975; Lévy-Bruhl 1923, 1971, 1983, 1985; Radcliffe-Brown 1964; Schultze 1900.

⁶ Werner 1948; Schultze 1900.

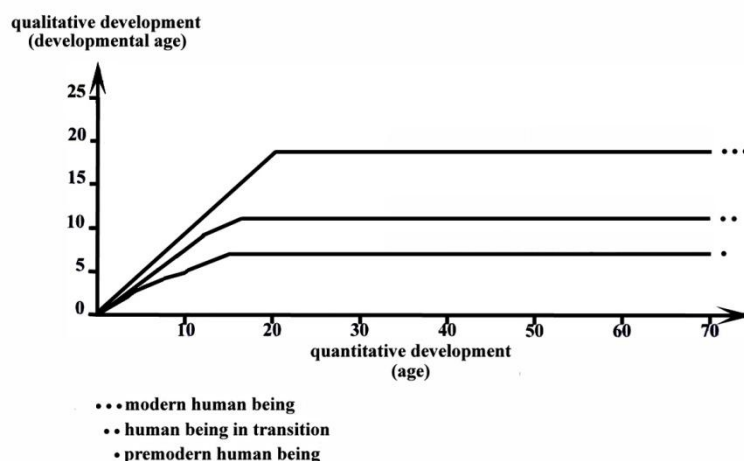
years – that defines commonalities and differences between the child and the premodern human being.⁷

For example, young children and nature peoples share the same language patterns as will be described below. Both groups share the same arithmetic, being able to add by using their fingers only, usually up to 5 or 10. They usually can only add or subtract, but not multiply or compute any numbers. Children and the greatest part of premodern humankind share the same traits of logical thinking, e.g., the lack of syllogistic conclusions. They have the same forms of physical understanding regarding space, time, mass, volume, length, and all other physical phenomena. They have the same understanding of wind, water, shadow, etc. Both groups regard any forms of matter and things as alive. They share the same underdeveloped concepts of causality and chance. They have the same mystical and magical-animistic view of nature.

Both groups have the same ideas regarding law. They both believe in the divine status of law, in the necessity of severe punishments, in extended and collective forms of judicial responsibility, and in the ability of natural elements to decide judicial cases. They have the same ideas regarding social affairs and politics. The modern child attributes magical and divine status to his parents by his sixth year (to adults generally). Likewise premodern humans attribute magical power and divine nature to their dead parents and ancestors. Thus, ancestor worship solely roots in the psychology of the child. Both groups disregard liberty rights and tolerance with deviating opinions, thus misunderstanding the depth and scope of democracy.

Both groups live in the same fairy tale world with mystical influences, magical powers, ghosts, monsters, witches, and sorcerers. Both groups believe in metamorphoses, from animals to humans, from humans to rocks, or whatever. Both groups understand dreams as real-life participations of the dreamer in the incidents dreamt, or as perceptions of incidents. Both groups do not understand the merely subjective and illusionary trait of dreams. On the whole, the parallels concern every single aspect and do not spare anything.⁸

developmental age and developmental stage



⁷ Schultze 1900; Werner 1948.

⁸ Werner 1948; Ibarra 2007.

Therefore, the conclusions are quite obvious. Premodern human beings stood either on the psychological stage of the child, or on intermediary stages, but not on the stages that shape the psychology of the modern human being.

History and Psychological Stages

Therefore, world history must be rewritten in terms of developmental psychology. Developmental psychology is the general theory of the human being, of the changing structures of the human being during history. Developmental psychology delivers the fundamental key to understand the history of language, population, economy, society, culture, politics, law, sciences, philosophy, religion, morals, arts, literature, etc. Only this way is it possible to understand the long way of the human history from the Stone Ages over peasant societies to the modern, industrial society. More, the rise of the fourth stage of formal operations is the key to understanding the rise of modern society with its core features such as sciences, industrial economy, enlightenment, democracy, and the modern way of life altogether.

Smaller or greater parts of this project – to discover and to describe developmental stages in history – has been already accomplished. Such descriptions already exist regarding the historical development of language⁹, population, economy, society, and culture¹⁰, law¹¹, sciences¹², religion, worldview, and philosophy¹³, morals¹⁴, politics¹⁵, violence, and arts and literature.¹⁶

The historical development of these domains mainly bases on the development of psychological stages. Conversely formulated, psychological stage development has caused the development of the phenomena mentioned. A deep and scientific understanding of these historical developments is only given by the consideration of these psychological stages respectively foundations. Prior historical descriptions could only touch the surface of the developments but could not reach their true foundations. Readers are requested to take a longer break for trying to understand the full meaning of the last sentence.

The role of psychological stages in shaping fundamentally social evolution from ancient to modern societies has been already outlined. Prerunners of this idea were Schultze, Elias, Frazer, Habermas, and Radding. Authors such as Auguste Comte, John Lubbock, Gotthold Ephraim Lessing, Karl Lamprecht, and Jean Gebser outlined such project ideas or corresponding theoretical considerations, too.

⁹ Schultze 1900; Brunner-Traut 1974.

¹⁰ Radding 1985; Ibarra 2007.

¹¹ Piaget 1932.

¹² Piaget & Garcia 1989.

¹³ Piaget 1959, 1969; Ibarra 2007.

¹⁴ Piaget 1932.

¹⁵ Radding 1985.

¹⁶ Gablik 1976; Le Pan 1989; Brunner-Traut 1996.

1 The first fact that has to be considered is that the whole premodern
 2 humankind did not establish the fourth stage of formal operations. Modern,
 3 industrialized nations harbor people staying on the fourth stage defining
 4 adolescents, premodern peoples stay on the stages of children. Therefore, it is
 5 necessary to discriminate premodern from modern nations, cultures, peoples.
 6 This division both follows and supports traditional divisions formulated by
 7 classical authors and theories. Both nature peoples and agrarian civilizations
 8 during millennia and all around the globe manifest similar or the same patterns
 9 coming from the lower psychological stages. They all have the same magical-
 10 animistic and mystical worldview, including the belief that all things and
 11 objects are alive, having mystical and magical powers. They all believe in
 12 witches, sorcerers, ghosts, spectres, etc. They all believe in the power of the
 13 dead, in nature gods, and in Olympic gods. They all share similar forms of
 14 religion, superstition, law, philosophy, morals, and politics, etc., that unify
 15 them as belonging to that we call traditional or premodern society.¹⁷

16 Conversely, the modern, industrial society has stepwise surmounted or
 17 abolished these customs, beliefs, practices, and patterns in the past 250 years.
 18 Modern, industrial society does not know anymore practices or the belief in
 19 divine ancestors, nature gods, magical treatments, judicial ordeals, judicial
 20 trials against animals, slavery, punishments in form of body harming or torture,
 21 duels and blood revenge, cannibalism, human sacrifices to the gods, and
 22 entertainments such as the Roman Arena games. The establishment of the
 23 fourth stage of human development accounts for the disappearance of these
 24 phenomena. This psychological progress caused both the decline of the archaic
 25 patterns mentioned and the rise of new cultural structures. Relatedly, modern,
 26 industrial society has stepwise developed elements and phenomena unknown in
 27 premodern society. To these new phenomena belong constitutional state,
 28 democracy, liberty rights, political tolerance, humanism, animal protection,
 29 women's liberation and emancipation, violence prohibition regarding civilians,
 30 especially children, humane punishment law, secularization, disenchantment,
 31 decline of religion and magic, growth of the sciences, unheard technological
 32 revolutions, and unparalleled economic growth.

33 However, it is quite clear that there are more psychological stages (and
 34 cultural stages) than the two mentioned. Development is a continuous process,
 35 starting in Stone Ages, running over peasant societies, and leading to modern,
 36 industrial societies. Development did not take place only once in history.
 37 Nature peoples occupied psychological stages lower than those of educated
 38 people in ancient Rome or Alexandria, medieval Paris or Lisboa during the
 39 16th century. Of course, there is evidence that the illiterate peasant or
 40 carpenter, sailor or soldier living in the 13th century in Europe or in the ancient
 41 Roman or Chinese Empire did not discriminate much from the hunter and
 42 gatherer in Australia or Indonesia. The lack of differences very great is that
 43 what ethnography or history really reveals. Even the intellectuals, philosophers,
 44 authors, and politicians of the great agrarian civilizations manifest not the
 45 fourth stage but more the second or third stage of psychological development.
 46 Their beliefs and practices match more to the lower stages, manifesting a sharp
 47 gulf to those of modern people, both of modern common and modern highly

¹⁷ Frazer 1994; Lévy-Bruhl 1923, 1985.

1 educated people. Accordingly, ancient and medieval philosophy originate in
2 lower stages than modern philosophy does.

3 However, even small differences are differences. Probably there were
4 some small differences regarding stage developments between nature peoples
5 and the common people living in agrarian civilizations. Probably the common
6 European people of the 16th century established higher stages than the
7 common people in ancient Egypt or Mesopotamia, however small this
8 difference might have been. Likewise, educated people in 16th century China,
9 India, or Europe might differ somewhat from educated people in ancient Egypt,
10 China, Mesopotamia, or Persia.

11 The assumption regarding these small differences is by no means a matter
12 of speculation. It consequently follows both from historical data and from the
13 knowledge developmental psychology provides. The latter one describes the
14 steady growth of mind and personality during 20 years or so from birth to
15 adulthood. This continuous growth can be divided in four stages, as Piaget had
16 done, but it can be divided also in 20 stages, assuming that each year is or can
17 be a certain stage. Piaget himself subdivided certain stages in smaller ones
18 respectively in substages, thus knowing much more than only four stages.
19 Likewise is it obvious that whole peoples in history did not only establish
20 either the preoperational, or the concrete operational, or the formal operational
21 stage. Sometimes they may have discriminated from each other by only one or
22 two developmental years at the average. It makes a cultural difference if a
23 people stays on the end of the preoperational stage or in the beginning of the
24 concrete operational stage, a difference amounting only a few developmental
25 years. Research shows that all psychological stages beyond the sensorymotor
26 stage, including all mixtures possible and intermediary stages, have been
27 historically realized anywhere and anytime.

28 It will be shown below that the differences between nature peoples on the
29 one hand and archaic kingdoms such as those of ancient Egypt or Mesopotamia
30 on the other hand manifest psychological stage differences. The same is true
31 regarding the differences between the famous archaic kingdoms on the one
32 hand and the great ancient civilizations of Rome, Greece, and China on the
33 other hand, coming into existence later than Egypt, Mesopotamia, or the first
34 Indus civilization.

35 It will be shown here the psychological stage differences between nature
36 peoples, pre-axial archaic kingdoms, post-axial ancient civilizations, and
37 modern, industrial societies. It is quite clear that also this classification is
38 superficial for there are many more cultural stages than only these four. Even
39 nature peoples discriminate from each other regarding psychological
40 development and cultural advancement. Rome and Greece in their archaic
41 times discriminate from their classic times, and these again from the Hellenistic
42 era. However, there is a steady growth of culture and civilization from the
43 Stone Ages over the pre-axial archaic kingdoms and the post-axial agrarian
44 civilizations to modern society. This continuous growth in terms of culture,
45 society, and technology, is deeply connected and caused by the continuous
46 psychological stage development.

Stages of Culture and Civilization

Nature Peoples

Nature peoples were all peoples from the beginning of the human race up to 10.000 B. C. It is said that half of the Earth's surface was occupied by nature peoples 2.000 years ago, and still a quarter 500 years ago. Only a hundred years ago, there were still a lot of nature peoples surviving remote from civilization. Now there are only few areas around the globe still harboring surviving nature peoples, often protected against damaging influences by national governments.

Economically they live a life as hunter and gatherer, by hunting, fishing, and gathering the eatable their environments provide. Often they live a nomadic life in search for new hunting grounds because they need great areas to find sufficient supply. Therefore, they live in small groups, often hostile to alien groups because of competition for food. They make their weapons and tools by Stone-Age technologies, and also their clothes if they have any.

Nonetheless, they were able to people even the hardest regions such as the Polar region in the North, Siberia, the jungles, and the deserts in Australia and elsewhere. Though they know how to survive where unskilled modern people would perish they manifest sometimes incredible shortcomings hardly understandable. For example, the Australian aborigines and some tribes in South Patagonia never invented or dressed some protective clothes. Nights in the desert or in Fireland are very cold but the people slept outside naked. While the aborigines warmed their naked bodies with nocturnal fires, some tribes in Fireland tried to keep warm only by sleeping close to their family members.

Most people that are described as nature or Stone Age people during the 19th and 20th century were not any more strict nature or Stone Age people because they used imported metallurgy and they planted gardens. However, often they held most of the archaic patterns despite of their neolithic advancements. Ethnography is full of good descriptions of these peoples.¹⁸ In this list only the Spencer and Gillen book on the Australians really describes people without any forms of farming and housing.

Piagetian research among nature peoples found out that they strictly stay on the preoperational stage, as Piaget himself had repeatedly determined.¹⁹ The whole ethnographic literature relative to nature peoples completely matches to the preoperational stage described by developmental psychology. They use languages typical for children very young, they count numbers like kindergartners if at all, they have the same mystical and magical-animistic view, they believe like children in ghosts and witches, etc. However, because they stay on the child's stage for many years they acquire during their boyhood a knowledge, accumulated during hundreds of generations, how to survive where not only children but also unskilled civilized adults would perish.

¹⁸ Relative to certain tribes: Fortune 1963; Grubb 1914; Radcliffe-Brown 1964; Everett 2008; Spencer & Gillen 1904; Evans-Pritchard 1976; generally: Lévy-Bruhl 1923, 1971, 1983, 1985.

¹⁹ Piaget 1974; Ponzo 1966; Dasen 1974, 1977.

Archaic Kingdoms

Especially the introduction of agriculture, cattle breeding and farming, increase of population and population density, and urban settlements belong to the preconditions of the rise of the archaic kingdoms. Hence agriculture is a precondition to the rise of population and to the origin of towns it is therefore also the general precondition to the rise of the state. A central government is necessary to organize the new way of life. Ancient Egypt, Mesopotamia, and the Indus culture were the first cultures to represent this stage of civilization. Ancient Egypt is said to be the first central state respectively the first archaic kingdom in history, while Mesopotamia was a conglomerate of city states initially. The Indus culture reached in the north up to Afghanistan, consisting of great a many of towns, with population sizes resembling to those of the ancient Egypt. Perhaps it makes sense to classify some other cultures to this stage of archaic kingdoms although they often appeared thousands of years later, e.g. Angkor Wat in Cambodia, the Pre-Columbian American cultures of the Maya, Aztec, and Inca, and the Chinese Shang dynasty (originated 1600 B. C.).

Ancient Egypt is said to be the first and most impressive central state respectively archaic kingdom. With Egypt world history began, as it is often maintained, and Egypt and Mesopotamia, being the fruit of the so-called Fertile Crescent, are the cradle either of civilization at all or of Western civilization at least. The first Pharaoh named Narmer (sometimes named Menes) unified 3100 B. C. the northern and southern part of Egypt, thus being the first great king in world history. Despite several changes in its history, ancient Egypt preserved main patterns of its culture constant and unchanged through several millennia. The culture with its religion and language survived even in its late period, being then subsequently under Persian, Greek, and Roman government, and collapsed only through Christianization during the 4th and Islamization during the 7th century.

Their achievements in architecture belong to the most outstanding features of the archaic kingdoms. Temples, pyramids, and palaces built in Egypt and Mesopotamia are unique and overwhelming even in comparison to contemporary architecture. The Cheops pyramid of Gizeh, consisting of 2,5 million blocks each weighing 2,5 tons, and some others weighing up to 50 tons, is the only ancient world miracle that has survived by today. Some current architects declare not to know how they could build the Cheops pyramid even by contemporary technologies, some others say it would need (e.g., eight) years to make a copy. The Sphinx of Gizeh is said to be the greatest sculpture ever created in history. The building of the pyramids, the control of the irrigation system and the storage of food were the elements upon the state was built. Further, building of pyramids was not only a characteristic of Mesopotamia and Egypt but also of China and Pre-Columbian America. It characterizes the beginning of great architecture – and civilization –, not any more of relevance to more advanced civilizations such as those of the Romans or Greeks in antiquity or the medieval India, China, or Europe for reasons possibly not fully explained by now (Mark Lehner tried to). Mesopotamia built more than 15 great step pyramids and influenced India and China culturally.

Comparably high population densities, agricultural food supply, and central state functions created complex societies with a high amount of labor division, economic productivity, and new products and services. These cultures learned considerable skills in architecture, metallurgy, crafts, pottery, trades, transportation, and arts. They created finest sculptures, furniture, gold masks, jewellery, and wall paintings. Glass was developed in Mesopotamia 1600 B. C. Mesopotamia and Egypt invented the first early forms of writing in history. Mesopotamia created the first epos in world history, the Gilgamesh epos, 2300-2400 B. C. Many skills and amenities sometimes reckoned to later times they had already invented 1000 or 3000 B. C. Indeed, these ancient civilizations created the economical, cultural, and technological foundation to that we call "civilization".²⁰

According to the Egyptologist Emma Brunner-Traut²¹, the ancient Egyptians still stood on the preoperational stage and did not establish the concrete operational stage. A great many of other Egyptologists and historians found remarkable similarities between the mind of the child and that of the ancient Egypt, Mesopotamian, Maya and Aztec.²² The ancient people strongly manifested patterns of mind and behavior that are known as preoperational and characterizing the mind of the child. They adhered to the magical-animistic worldview of the nature peoples, believed in ghosts, witches, and fairies, practised oracles, adored animals and natural objects as gods, etc. At first glance it seems that they created their cultural advancements more within the preoperational stage – that is by quantitative accumulation of knowledge not requiring higher stages - than by psychological stage advancements.

Ancient Civilizations

Some ancient civilizations developed some breakthroughs roughly from 500 B. C. onwards. New forms of mind, philosophy, politics, and technology came into being. According to Jaspers and Eisenstadt, we call these cultures as post-axial. Ancient Greece and Rome, India, and China define this group. The Roman and the Chinese Empire, coming into existence nearly at the same time, in the third or second century B. C., were the most famous and most successful agrarian civilizations. Among this group of ancient civilizations, the Greek culture appears as the most sophisticated culture in the entire ancient world. Especially in its Hellenistic era, from 300 to 50 B. C., with Alexandria as its centre, it developed the physical sciences to a level that was only reached again in Europe during the 17th century. Archimedes had no counterpart in the pre-axial cultures or in post-axial ancient Rome or Asia. The Greeks were the only premodern culture that introduced forms of democracy, and they did it on a highly sophisticated level, according to some criteria (not to every). The Greeks had the greatest philosophers in the ancient world. They modeled plastics as no other ancient culture could to, and they developed forms of literature unknown before, including tragedy and novel. The Roman conquest of Eastern Mediterranean annihilated this breakthrough and prevented the

²⁰ Fischer 1981; Harris 1997; Roaf 1998; Assmann 1996; Morowchick 2002; Cornevin 1980.

²¹ Brunner-Traut 1974, 1996.

²² Schneider 1909; Frankfort et al. 1981; Ibarra 2007; Frazer 1994.

1 whole ancient Western world from preserving and regaining the Hellenistic
 2 revolution. The Romans did not succeed to elevate science, politics, and culture
 3 to Hellenistic stages during the whole time of their empire.²³

4 Although the Egyptians and the Mesopotamians tried to expand, the
 5 Greeks with Alexander the Great were the first to build an empire. Possibly
 6 influenced by Alexander's project, the Indians under Ashoka 268 B. C. and the
 7 Chinese under Gaozu, the first king of the Han dynasty, 202 B. C. unified their
 8 countrys, being the first emperors of their countries.

9 Especially the ancient Roman and the Chinese Empire, but also the
 10 subsequent medieval Europe, China, Persia, Arabian world, Japan, Ottoman
 11 Empire, and India, developed culture and civilization to some higher stages
 12 than the pre-axial cultures had done. These cultures had greater population
 13 sizes, greater cities (especially China), more international contacts, higher
 14 developed forms of division of labor, more and new technologies, somewhat
 15 higher developed sciences, elaborated forms of philosophy, and higher
 16 developed forms of arts. Even at the first glance, the post-axial civilizations
 17 manifest more rational and less archaic structures as the pre-axial civilizations
 18 had done. The Pharaoh cult, the pyramids, the strictly mythological way of
 19 thinking, the extreme conservatism and the endless repetitions of rituals during
 20 millennia – that all appears much more archaic than debates in the senate, visits
 21 in the Caracalla thermes, the rhetoric of Perikles, the Greek tragedies, the
 22 philosophy of Aristotle, the Chinese invention of paper and book printing, etc.

23 Japan, China, and Europe during the 16th century surmounted their ancient
 24 developmental stages according to many aspects. China sailed to Africa in the
 25 15th century, and Europe around the globe in the 16th century, being the first
 26 civilization in world history to discover every single continent and world
 27 region. With Charles the Fifth the Habsburgian dynasty dominated greater
 28 parts of Europe, North-, Middle-, and South America, outperforming the
 29 ancient Roman dimensions, and the Chinese and Japanese elevated their
 30 cultures regarding many elements. India built its Taj Mahal, and the Chinese
 31 improved their great wall.²⁴

32 However, both the post-axial agrarian civilizations of the antiquity and
 33 those of the medieval times continue many of the cognitive and cultural traits
 34 both of nature peoples and of the pre-axial civilizations. The magical-animistic
 35 worldview may have weakened in comparison to former stages of culture but it
 36 remained intact predominantly. Likewise the belief in ghosts, witches,
 37 sorcerers, oracles, etc. continued during the whole existence of this type of
 38 civilization. Ancestor worship, adoration of natural entities and Olympic gods,
 39 and seasonal cults originating in the Stone Ages continued.²⁵ Likewise the
 40 moral conditions, though advanced in comparison to the cannibalism of the
 41 nature peoples, and to the human sacrifices of the pre-axial cultures, are
 42 backward. Slavery, arena games with cruzifixion, tortures, and chases, etc.,
 43 appear as primitive forms of civilization, as already Charles Darwin recognized
 44 and formulated.

²³ Russo 2005.

²⁴ Johnson 1995; Friedländer 1913; Murowchick 2002; Russo 2005.

²⁵ Dodds 1966; Thorndike 2003; de Sahagún 1989; Rose 1926; Frazer 1927, 1994; Fustel de
 Coulanges 1956.

According to Radding and Le Pan, medieval Europe predominantly adhered to the preoperational stage, as did the cultures of the Mayas and Aztecs.²⁶ The greatest part of post-axial ancient populations may have stayed on the preoperational stage. Some people may have established the concrete operational stage, as Piaget himself remarked relative to Ionian philosophers. The Aristotelian philosophy is at the transition concrete operational stage / formal operational stage, as some reconstructions could convincingly demonstrate.²⁷ Intermediary stages between the third and the fourth stage may have characterized those ancient and medieval people that were far beyond their time (Archimedes, Philo of Byzantium, Demokrit, Lukrez, Cicero, Abelard, Francis Bacon, Avicenna, Ibn Chaldun, Thomas Aquinas, etc.). Consequently, neither antiquity nor the Middle Ages knew scientists like Darwin, Feuerbach, Lévy-Bruhl, Maxwell, Planck and Einstein, writers like Shakespeare or Goethe, and musicians like Bach, Beethoven or Mozart. Developmental psychology explains the causes to that.

Modern, Industrial Civilization

The modern, industrial civilization developed in Europe and North America after 1750. It has conquered or penetrated now all five continents and most nations of the world. Classic sociologists recognized very early that this type of civilization is new and unique and that there is a sharp gulf between the agrarian and the industrial civilization (Comte, Weber, Durkheim, Lubbock, Tylor, etc.) (Frazer 1927). Industrial civilization did not originate in certain property rights differences, class conflicts, exploitation of colonies or peripheries, or advantageous trade routes as materialistic authors such as Marx, Senghaas, North, Thomas, Frank or Wallerstein had suggested. It mainly originated from psychological stage advancements as some authors described.²⁸

The rise of the physical sciences during the 17th century is the main cause to the rise of industrial society because it provided the new industrial technologies, but the establishment of the formal operational stage gave birth to the rise of the physical sciences.²⁹ Further, the psychological maturation of modern people relative to the rise of industrial society has not only manifested in the rise of advanced sciences and technologies but also in the rise of the achievement society (David McClelland, Alex Inkeles, H. Heckhausen), in the advancement of skills and abilities such as discipline, diligence, peacefulness, planning capacity, flexibility, and readiness to learn, abilities that make industrial society via human capital enrichment possible and grow.

Modern society started with the era of Enlightenment, too. It criticized for the first time in history fundamentally and radically lack of freedom. It demanded the abolishment of slavery and feudalism, brutal punishment law and torture, and the maltreatment of lower classes, women, and animals. Further, except of the Greek prurunner, modern society was the first to

²⁶ Radding 1985; Le Pan 1989; Ibarra 2007.

²⁷ Piaget & Garcia 1989; Fetz 1982.

²⁸ Piaget & Garcia 1989; Habermas 1989; Elias 1982; Schultze 1900; Frazer 1927.

²⁹ Piaget & Garcia 1989.

1 formulate principles of constitutional state and democracy. The Western world
 2 needed several generations to elevate both to acceptable stages, other parts of
 3 the world have been following with greater and smaller success, respectively.
 4 Developmental psychology has shown that the lower psychological stages are
 5 in favor for authoritarian principles and the higher psychological stages
 6 account for the coming into existence of liberty rights, tolerance, democracy,
 7 and humanism. The formal operational stage is the source to the development
 8 of modern humanism and democracy.³⁰ On the whole, the adolescent stage of
 9 formal operations causes the foundations to the emergence and to the entire
 10 character of the modern industrial world and modern way of life.

13 **The Development of Language through the Four Historical Epochs**

15 The child learns the basis patterns and the grammar of his or her's mother
 16 language in the years 1;0 to 5;0. Language acquisition is divided into certain
 17 stages. Johansson³¹ discriminates five stages every child has to go through.

- 19 a) One-word stage
- 20 b) Two-word stage
- 21 c) Hierarchical structure, but without embedding and recursivity, and
 22 without subordinate clauses
- 23 d) Syntax with recursivity and embedding
- 24 e) Full grammar language

26 Stage a) starts with 1;0 and stage e) is reached with roughly 5;0 years. A
 27 child aged five usually knows complex syntax, passive, plural, tenses, even
 28 future II or conditional II. The child aged five still has problems in application
 29 but it knows the full amount of syntax and grammar. The typical language of
 30 children lies therefore in the years before five. Young children of the lower
 31 stages of language acquisition do not master sentences with subordinate clauses
 32 but only main sentences. Children under three years have no word order in
 33 sentences. Initially they can only use one noun in the sentence and cannot
 34 attribute more than one adjective to the noun. They know only active words
 35 and not passive ones. Children under three years don't know any tenses, not
 36 even past or future I. As they apply only present tense it is difficult to define
 37 their present tense as representing the true present tense. More precisely, they
 38 have only one category of tense. Likewise they have no plural and no
 39 comparative. More, the early children's language is full of onomatopoeic
 40 words such as puffpuff for trains or kikeriki for chickens, and of reduplications
 41 such as wauwau or puffpuff.

42 The languages of nature peoples have just the same characteristics.
 43 Everett³² described exactly the same phenomena regarding the language of the
 44 Pirahã in the Brazilian jungle. They have a so-called non-recursive language
 45 without subordinate clauses, phrases without word order, and a language

³⁰ Piaget 1932.

³¹ Johansson 2005: 235.

³² Everett 2008.

without tenses, plural, passive, and comparative. Their language and grammar strongly resembles to stage c) of the Johansson's description, spoken by children aged three.

It was found that most third-world-languages, and far distant in the past, all languages did not have full grammar stage and were close to the Pirahã grammar. For example, Riau Indonesian has no syntax, no word order, no subordinate clause, no plural, and no tenses. It is at the bottom of language evolution, that is, a so-called IMA-language, an isolating-monocategorical-associational language. Morphology, grammar and syntax are to the lowest minimum reduced. IMA-languages are close to the language of the early child and of archaic man.³³ Riau Indonesian resembles to the other Indonesian languages and to Vietnamese, Chinese, and Thai.³⁴ Languages spoken by people of Papua-New Guinea, Black Australia, and Indian America (e.g., Quechua) likewise lack subordinate clauses and share the Pirahã style.³⁵ Of course, third-world languages changed during the past century or so due to adaptation to European languages, modernization and globalization, psychological stage development and modern school education.

Languages Of Nature Peoples And Children In Comparison

Strict word order in phrases is missing	Children below three years	Nature peoples e.g., Pirahã and Riau Indonesian
Telegram style of sentences	Children below three years	Pirahã and Riau Indonesian
Main sentences only, without recursion and embedding	Children below three years	Pirahã and Riau Indonesian
No subordinate clauses of any kind	Children below three years	Pirahã and Riau Indonesian
Disjunctions and conjunctions such as "or" or "and" missing	Children below three years	Pirahã and Riau Indonesian
Phrases such as "Heinz and Peter go to bathroom" are not possible (two agents in a phrase are too many)	Children below three years	Pirahã and Riau Indonesian
Not more than one adjective added to a noun	Children below three years	Pirahã Riau Indonesian?
Not more than one verb in a phrase	Children below three years	Pirahã Riau Indonesian?
Passive missing	Children below five years	Pirahã and Riau Indonesian
Plural missing	Children below three years	Pirahã and Riau Indonesian
Comparative / superlative missing	Children below three years	Pirahã and Riau Indonesian
Most tenses are missing	Children below three years	Pirahã and Riau Indonesian
Many repetitions	Children below five years	Pirahã Riau Indonesian?
Inflections	Children beyond two	Pirahã

³³ Gil 2012: 20.

³⁴ Gil 1994: 180.

³⁵ Sampson 2012: 16; Simpson 2002: 287-308; Progovac 2012; Enfield 2002; Levinson 2005: 637.

	years	
No Inflexions	Children below two years	Riau Indonesian
Preference of concrete to abstract words	Children	Pirahã Riau Indonesian?
Syllable duplication	Children below three years	Many archaic languages
Onomatopoesis	Children below three years	Many archaic languages

Languages in prehistory had no recursion and embedding at all. The Proto-Indo-European languages had only main sentences. SAE-languages such as German, Dutch, Old English, and Romance had no subordinate clauses during medieval times.³⁶ The first Akkadian texts likewise do not entail subordinate clauses. 500 years after the invention of literacy the Akkadian texts appeared with subordinate clauses for the first time in history.³⁷ It was the invention of writing that caused the transformation from Johansson's stage three to the stage five in history, that is, full grammar came into existence due to the invention of writing. Greek overtook full grammar from Mesopotamia. Latin syntax presumably attained full grammar status not before 100 B. C. due to Greek influences.³⁸ European languages needed roughly 1000 years to develop full grammar traits due to the adaptation of Latin grammar, used as the common written language during the past two millennia.³⁹

Full grammar was born in Mesopotamia and went then to Greek and Latin, from there to the European languages, which again fostered to transform third-world languages during the past 150 years. Literacy is the main causer to that process but not the only one. This fact matches to the notion of Piagetian Cross-Cultural Psychology that school education is a main motor behind psychological stage development. Of course, the fact that pre-axial languages shared the main traits of stage three (according to Johansson) shows that these peoples stood on the early stages of the preoperational stage. Among other factors, literacy promoted psychological stage development that originated full grammar.

Post-axial civilizations, at least in the West, attained full grammar standard. May be that there is no further difference relative to developmental stages between Latin grammar and the grammar of modern SAE-languages. Possibly here is a trace to illuminate why Asia did not develop the modern world and why the West did it.

Emma Brunner-Traut⁴⁰ described that the ancient Egyptians' language resembled to the language of the child because this people stood on the preoperational stage. Her description actually shows that their language was in the middle between the language of the Pirahã type and full grammar. Since the first dynasties Egyptian language was influenced by writing.

The child, especially in his preverbal phase, uses expressive interjections while cheering, crying, or demanding. The ancient Egypt has remarkably many

³⁶ Karlsson 2012: 196.

³⁷ Karlsson 2012: 195; Sampson 2012: 6, 11, 17.

³⁸ Karlsson 2012: 198.

³⁹ Karlsson 2012: 202.

⁴⁰ Brunner-Traut 1974: 79.

more such expressives than more developed languages do.⁴¹ The texts during the time of the Old Empire predominantly entailed main sentences without strict word order. Sentences are connected to each other paratactically and not hypotactically. Egyptians in their texts combine sentences with “and then” similar to children. They did not introduce the concessive phrase. Like children of the third stage ancient Egyptians did never apply the conjunction “although”, preferring simpler forms of conjunctions.

The child aged three when transforming from the second to the third stage of language acquisition tries to form full phrases by the following way. “Mommy house! – Mommy paint! – paint a house! – Mommy paint a house!” The reason to that is the difficulty to focus both on subject, object and verb. Therefore the child focus first on two aspects and only then he or she is able to combine all three aspects. It needs a time until he or she can formulate the complete sentence at once. Brunner-Traut⁴² maintains that traces of this developmental phenomenon called “prolepsis” penetrates ancient Egyptian language. It is full of phrases like “Schu, he elevates it – My heart, it is not in my body.”

Mesopotamia was the first civilization that invented writing, about 3300 B. C. or so. The first pictogram writing was replaced by a phonetic syllable system around 2800 B. C., enabling the reduction of 2000 signs to 600. Semites made the first alphabetic writing around 1900 B. C. Phoenicians created 29 signs assigned by a phonetic content with consonants only around 1500 B. C. The Greeks overtook the Phoenician alphabet and launched vocals into it, thus introducing the modern system.⁴³ Obviously grown abstract reasoning capacities caused this evolution of writing systems.

Writers in Mesopotamia and Egypt wrote from the right to the left side, and only the post-axial civilization from 500 B. C. onwards changed the sides. In Greece around 500 B. C. writers changed the sides. Young children can write from right to left and from left to right likewise. Modern children after their fifth year write then from left to right only, in consequence of the increasing left-brain dominance, corresponding to the evolution of the concrete operations. Several researchers described that archaic cultures did not have left-brain dominance, too, coming into existence historically only in post-axial civilizations.⁴⁴ Therefore, the Phoenician-Greek alphabet probably was a main motor to the evolution of full grammar languages.

Nature peoples	Language of the Pirahã type	Illiteracy	Johansson's stage three
Archaic kingdoms	Not full grammar language	Literacy Pictogram writings or alphabets in early stages	Johansson's stages three and four
Ancient civilization, at least in the West	(Transition to) full grammar language	Fully developed alphabet	Johansson's stage five
Modern, industrial civilization	Full grammar language	Fully developed alphabet	Johansson's stage five

⁴¹ Brunner-Traut 1974: 63.

⁴² Brunner-Traut 1974: 71.

⁴³ Fischer 1981: 156-159, 225; Roaf 1998: 70.

⁴⁴ Brunner-Traut 1996: 141-144.

The Development of Worldview, Science and Literature through the Four Historical Epochs

The child up to six or eight years thinks about the world mythologically. His or her ideas about the functioning of the cosmos, stars, sun, moon, seasons, waters, wind, mountains, woods, animals, and humans are magical-animistic. The child is inclined to explain the world order and the incidents in terms of magical actions made by god, monsters, fairies, ghosts, and other mythical persons. There is only one type of story and of narration the child is interested in, the myth. The myths explain to the child everything by telling a story about mythical actions of some heroes or mythical beings. Among a lot of further traits, miracles and physical impossibilities characterize the myth, discriminating it from more elaborated narratives such as adventurer stories, novels, tragedies, and reportages. Child's mental abilities and constraints match to myths, while the other forms of narration surmount his capabilities and inclinations. The child aged nine or ten then does not anymore interest in myths, and starts with reading adventurer stories and novels, that is, with more demanding narratives more matching to the now grown intellectual abilities. The adolescent then is more liable to focus facts and not fictions in consequence of his grown rationality and empirical bias. The adolescent finally replaces the mythical by the empirical-rational view.⁴⁵

Nature peoples have the same mind and worldview as the children during their preoperational stage. Thousands of ethnographic descriptions⁴⁶ evidence that they share the same mind and worldview, full of mythological fantasies and narrations with mythical heroes and beings. Nature peoples explain the world by myths only, myths full of physical impossibilities, magic, and superpowers. Nature peoples are incapable to explain the cosmos by rational approaches and are inclined to mythical explanations. They do not discriminate myths from reportages but take reportages as myths, and myths as reportages. The only form of narration they are inclined to are myths. They are fascinated by myths, telling and hearing them again and again. Myths are their intellectual nutrition. Great a many of mythologists explained that there are no differences between children's myths and myths of the ancient peoples, in form, style, and content. That implies that as long as the humankind's mind stood on the mythical stage it shared the psychology of children entirely.⁴⁷

The archaic kingdoms such as Mesopotamia or Egypt did not surmount that mythological stage much. Their ancient literature shows that empirical and rational considerations about the order of cosmos, nature and society were rare in comparison to their mythological fantasies. Their descriptions entail mostly religious, magical, and mythological ideas that do not differ much from those of nature peoples. The orientalist H. Frankfort et al.⁴⁸ start their famous book with sentences, according to them the literature of ancient Egypt and Mesopotamia does not entail any forms of rational mind, characterized by

⁴⁵ Bühler & Bilz 1977; Piaget 1959; Werner 1948.

⁴⁶ E.g., Fortune 1963; Griaule 1975; Radcliffe-Brown 1964.

⁴⁷ Luria & Wygotski 1992; Frazer 1927; Schultze 1900; Werner 1948.

⁴⁸ Frankfort et al. 1981: 9.

logic, coherence and discipline. There is no rational reasoning in the texts to find, they maintain. Their mind is inclined to imaginations and fantasies, and nothing more, they sincerely add. For example, the Mesopotamians seriously explain storm winds by the wings of a great bird, and the Egyptians explain the night saying the goddess Nut eats the sun every night, which wanders through Nut's body, and leaves it during dawn.⁴⁹ Literature does not reveal other forms of descriptions as such. Schneider⁵⁰ and Brunner-Traut⁵¹ described that the ancient Egyptians were inclined to myths as children are. According to Assmann⁵², rational discourses on society and politics are not to find in ancient Egypt. Their literature is full of myths as its main form, accompanied by prayers, religious texts, letters, biographies, and songs. Their literature never developed epos, drama, and novel.⁵³

Accordingly, Egypt, although being a culture with tremendous historical tradition and unique permanence, hadn't any historiography. It hadn't any historians who wrote down the true history, they had no Herodot, not to speak from Thukydides, because they were not interested in facts but rather more in legends.⁵⁴ Expectedly, the archaic kingdoms did not contribute much to the development of the natural sciences. They developed some skills in mathematics and astronomical observations but did not develop the physical sciences.⁵⁵

The situation changes in the post-axial civilizations, especially in Greece. The development from myths over philosophy to natural sciences is well described there. Homeric Greece did neither know philosophy nor sciences. With the Ionian philosophy Greece surmounted the mental level of the archaic kingdoms, and with the development of the natural sciences Greece surpassed the whole ancient world, including the achievements of the Roman, Indian, and Chinese civilization during their premodern times. However, the Hellenistic sciences existed only for some 300 years, slowly vanishing during the first centuries of the Roman Empire.⁵⁶

Greek literature started with the epos, the two works of Homer. The Greeks invented the tragedy and the comedy, and later on even the novel, although they wrote only some dozens of novels that presumably did not disseminate much.⁵⁷ History became with Thukydides, Polybios, Livius, Tacitus, Cassius Dio, etc. a true science. Authors such as Cicero or Plutarch were unknown in pre-axial civilizations, and unsurmounted up to eve of the era of Enlightenment.

Of course, the overall majority of people in the great post-axial civilizations in West and East remained inclined to myths and did not attain the formal operational stage, thus being unable to understand scientific approaches. Therefore, differences between pre- and postaxial civilizations concern more

⁴⁹ Hornung 1999: 96; Frankfort et al. 1981: 28, 33.

⁵⁰ Schneider 1909.

⁵¹ Brunner-Traut 1996: 128, 148-151.

⁵² Assmann 1995: 37.

⁵³ Brunner-Traut 1996: 145.

⁵⁴ Hornung 1999: 153; Brunner-Traut 1996: 156.

⁵⁵ Brunner-Traut 1996: 129-140.

⁵⁶ Russo 2005.

⁵⁷ Snell 1975.

the intellectual elites, and not the common people, who stood more or less on similar stages across the both agrarian epochs.⁵⁸

Mind and worldview radically changed during the rise of modern, industrial society. Both Galilei and Shakespeare started their work in the 1590ies. The childlike inclination to myths vanished during the early modern times, likewise the magical-animistic worldview, with its belief into witches and sorcerers.⁵⁹ The natural sciences resurrected during the 17th century, reaching unparalleled heights in whole history during the subsequent centuries. The intellectual elite attained the adolescent stage of formal operations for the first time in history, and the whole modern population did so during the 20th century. The 20th century saw for the first time in history whole populations having surmounted the psychology of the child and having established the formal operational stage.⁶⁰

Not by chance, literature, music, and arts exploded during the modern era, all in consequence of the psychological stage development.⁶¹

The Development of Magic and Religion Through the Four Historical Epochs

Both nature peoples and agrarian civilizations likewise know the adoration of the dead, godhead of heaven, Olympic or domain gods, and nature gods such as sun, wood, mountain, water, etc. However, nature peoples invest more time and energy in magic and religion than the agrarian civilizations did, and they again are much more religious than any kind of industrial civilization. Religion was very strong as long as humankind shared the psychology of the child, and considerably and stepwise declined with the rise of the formal operational stage during the age of Enlightenment and later on.

Developmental psychology evidenced that children initially, irrespective to any socialisation impact, believe that the world was created by humans and divinities. More, they believe that the existence and continuation of the world depends from magical actions of humans and divinities. With the decline of magic during the concrete operational stage, the child aged eight or ten years finally does not anymore believe that humans are creators, leaving the role to the godhead alone.⁶²

The whole premodern humankind shared this preoperational belief of the child. Nature peoples invested weeks or months of the year to exhibit magical rites destined to preserve the mere existence of the world. They really believed as the children do that the continuation of the cosmos originates in these rites they conducted on a regular basis. These rites were believed to reproduce the creation act of the cosmos.

For example, the Australian aborigines overtook in their annual rites the role of the first creators of the cosmos, believing to be the incarnation of the

⁵⁸ Thorndike 2003; Frazer 1927, 1994; Rose 1926.

⁵⁹ Frazer 1927; Lévy-Bruhl 1923, 1985; Thorndike 2003.

⁶⁰ Piaget & Garcia 1989; Flynn 2007; Schultze 1900; Werner 1948.

⁶¹ Gablik 1976; Le Pan 1989.

⁶² Piaget 1959.

1 first humans on earth. They were both gods and humans, composite-figures
 2 consisting of elements of gods, plants, animals and humans alike, especially
 3 humans and animals. The aborigines believe that during their rites they – as
 4 composite-figures – transform into all elements the cosmos consist of. They
 5 believe as the children do that the cosmos consist of transformed human
 6 beings. The cosmos came into being by the transformation of humans into the
 7 cosmos. As the aborigines “die” during their rites they reproduce the death of
 8 the ancestors in making the cosmos thereby. The dead bodies make all
 9 elements the cosmos consist of, such as waters, woods, rocks, etc. These
 10 elements again are the makers of the next generation of humans because the
 11 souls of the elements reincarnate in the wombs of women. This core idea of
 12 totemism unifies all elements into one great world system, unifying nature and
 13 society. Totemism implies that different groups of humans are responsible for
 14 the magical preservation of different classes of elements the cosmos consist of.
 15 All totemic groups together preserve therefore the whole cosmos.⁶³

16 Further, the aborigines apply also another method of creation and
 17 continuation. During months of a year they reproduce ritually every single
 18 element such as clouds, winds, trees, flowers, birds, insects, etc., believing that
 19 the continuation of these species and elements depend from their magical
 20 rites.⁶⁴

21 Australian aborigines seem to invest more time and energy into these rites
 22 than most other nature peoples. However, these totemic ideas and creation rites
 23 penetrate the whole ancient world, especially nature peoples but also the
 24 agrarian civilizations. Annual magical rites to preserve the entire cosmos, the
 25 existence of sun, rain, fertility, animals, and harvests, are to find in every
 26 agrarian civilization across the five continents. As magical rites they continued
 27 during the whole antiquity and medieval times by the 19th century, and as
 28 mentally emptied folklore by today.⁶⁵

29 Further, even the great mysterious religions of antiquity such as the Greek
 30 mysteries of Eleusys, the Persian Mithra religion, the Mesopotamian cult of
 31 Attis, the Egyptian Osiris cult, or Christianity originate in the totemism of the
 32 Australians, or better: in the psychology of the child, in his artificialism
 33 according to Piaget.⁶⁶ Therefore, the idea of the dying god, that recreates the
 34 energy of the cosmos by his annual death, to find in every ancient religion,
 35 shares the corresponding totemic beliefs of the nature peoples. When god dies
 36 in the beginning of spring and resuscitate later as summer and life, sun and
 37 harvest, then there is a striking correspondence to the rites of the Australians.
 38 Correspondingly, the Christian god came into being with the rebirth of the sun,
 39 a typical totemic idea (the sun being a representation of god).

40 More, as long as the people celebrate the holy mess symbolizing death and
 41 rebirth of the god, as long it is in their own hands to preserve the cosmos. The
 42 holy mess originates in the totemic rites of the nature peoples, even in the
 43 Australian rites described, as already Durkheim⁶⁷ had clearly recognized. The

⁶³ Spencer & Gillen 1904; Durkheim 1965.

⁶⁴ Spencer & Gillen 1904; Durkheim 1965.

⁶⁵ Frazer 1994, 1927.

⁶⁶ Piaget 1959.

⁶⁷ Durkheim 1965.

1 corresponding rites are to find in Hinduism, Buddhism, Shintoism, Greek,
 2 Chinese, and Egyptian religion. The holy mess originated in the psychology of
 3 magic and artificialism, where the people themselves believed to recreate the
 4 cosmos. Without their mess, they believed, the cosmos wouldn't survive.⁶⁸

5 However, it is obvious that the nature peoples, e.g. the Australian
 6 aborigines, had a much clearer and deeper consciousness of their role in
 7 making the cosmos as the believers of the ancient religions during antiquity
 8 and Middle Ages. The visitors of the holy mess in antiquity and Middle Ages
 9 have preserved some of the archaic magic and the corresponding
 10 consciousness, but the holy mess lost its original meaning when people
 11 reached the developmental age of children aged nine and ten during the age of
 12 Enlightenment and later on. Post-axial ancient and medieval people lost more
 13 and more the initial belief in their own magical role in preserving the cosmos,
 14 and the seasonal rites, destined to preserve the cosmos, transformed to being
 15 mere folklore only during the modern era.

16 This original magical-artificialistic belief was in the archaic kingdoms still
 17 much stronger. It was stronger there as in the post-axial religions but weaker as
 18 in Australian religion. The Pharaoh was seen as cosmocrator and as sungod Rê
 19 who rules society and nature, heaven and earth. The whole people believed that
 20 the Pharaoh himself caused the running of the cosmos, sun, waters, winds,
 21 harvests, and people. The Pharaoh himself preserved the mere existence of the
 22 cosmos. Without the holy rites in the temples the cosmos would perish and the
 23 sun would not reappear in the morning – that was the deep conviction of the
 24 people. The Pharaoh opens every morning the great door of the temple to allow
 25 or to order the sun to come warming and shining on the whole world. He
 26 breaks the seals of the door in a daily and holy ceremony.⁶⁹ Although the kings
 27 and emperors of the post-axial civilizations preserved some cosmocratic
 28 abilities they did not match to those ascribed to the Pharaoh.⁷⁰

29 According to the totemic beliefs of the nature peoples, the gods or humans
 30 that created the world, the first ancestors, were composite-figures consisting of
 31 elements such as humans and animals. Every element and being in the world is
 32 therefore divine. Especially animals were seen as divinities ruling the world
 33 and having magical power. Every totemic clan had therefore the duty to care
 34 for and to adore those animals that belong to their clan. Different species
 35 belonged to different totemic clans. The members of the crocodile clan
 36 believed to be crocodiles in nature and regarded the crocodile as the god,
 37 creator, and father of their clan, etc. Neonates are then reincarnations of the
 38 first crocodile, etc. Generally, nature peoples regard animals as creators of
 39 culture, having once taught humans how to live and having brought to them all
 40 the tools needed to live a life.⁷¹

41 Developmental psychology can explain the origins of these totemic beliefs.
 42 Children initially do not discriminate dead matter from living beings, assigning
 43 life and consciousness to all beings and elements. Waters, woods, mountains,

⁶⁸ Frazer 1927, 1994; Griaule 1975; de Sahagún 1989.

⁶⁹ Fischer 1981: 264; Frankfort et al. 1981: 220-221; Hornung 1999: 35, 45, 48; Assmann 1995: 218-223; Brunner-Traut 1996: 99.

⁷⁰ Frazer 1927, 1994.

⁷¹ Spencer & Gillen 1904; Durkheim 1965; Frazer 1994.

1 plants, animals, and humans – they all are living and intelligent beings, they are
 2 all the same in nature, discriminating from each other only by the outer
 3 physical appearance. Children initially ascribe to animals the same amount of
 4 intelligence as to humans. Children by their fifth year believe that cats can
 5 transform into dogs within a second, even before their eyes, as experiments
 6 have shown, or humans to animals, etc. This belief in the possibility and reality
 7 of metamorphoses is part of the preoperational stage.⁷² Ethnology shows the
 8 prevalence of the belief into metamorphoses both outside and inside the
 9 totemic belief system.⁷³

10 The Egyptian religion has preserved greater parts of the totemic adoration
 11 of animals. Especially preserved the Egyptians the Australian idea that
 12 composite-figures must be gods, according to the formula:
 13 animals+humans=gods. A being consisting both of animal and human body
 14 parts must be a god, they assumed. In texts, paintings, and sculptures the
 15 divinities frequently appear as animals. Pharaoh appears as lion, bullock or
 16 hawk, later on as a sphinx. Ptah embodies in the Apis bullock. Hathor comes as
 17 cow, Amun as ram, and Sobek as crocodile. Some divinities as for example
 18 Anubis or Horus appear sometimes only as animals (jackal-Anubis, hawk-
 19 Horus) or as composite-figures, as human body with the head of the animal.
 20 The goddess Meretseger has a human body with a snake head, or conversely a
 21 snake body with a human head. As the nature peoples the Egyptians believed
 22 that the first ancestors and creators of the world already had this composite-
 23 figure nature. Accordingly, the Egyptians did not only adore animals but they
 24 also cared for them after their death. Archaeologists found millions of
 25 mummies conserving cats, dogs, birds, etc., lying in their graveyards.⁷⁴

26 Nature peoples and Egyptians share more commonalities regarding
 27 totemism. Different villages in ancient Egypt adored different animals, as
 28 among nature peoples different clans have different animal divinities. Among
 29 nature peoples it is custom that clan members defend their holy animals against
 30 their maltreatments made by humans not belonging to this totemic clan. Bloody
 31 battles between different clans, or between women and men from the same
 32 village, start aroused by the killing or abuse of a certain animal being the
 33 divinity of a certain clan or gender.⁷⁵ The same patterns are reported from
 34 ancient Egypt. The residents of Dendera fought against the people of Nubt
 35 because of such violations of animals. The residents of Ombus eat uncooked a
 36 resident of Tentyra because of such a crime.⁷⁶

37 The post-axial Greek-Roman or the Chinese civilization do not share this
 38 totemism to the extent of the nature peoples or the ancient Egyptians. However,
 39 they did not surmount it completely. Their divinities can still appear as
 40 animals, but in a much weaker form. Even in the Middle Ages the totemic
 41 beliefs continued according to them every human has an animal counterpart,
 42 coming to life and dying at the same time. More, by the 19th century it was
 43 believed in Europe that women get pregnant by certain landscapes, rocks, or

⁷² Werner 1948.

⁷³ Lévy-Bruhl 1971, 1983.

⁷⁴ Hornung 1999: 168-179; Brunner-Traut 1996: 117-118.

⁷⁵ Durkheim 1965.

⁷⁶ Roeder 1998: 391-401.

the sun, thus sharing the same belief as the totemic nature peoples. The whole premodern world believed that animals have the reason and mind of humans. Therefore animals were accused before courtyard for certain crimes and were sentenced by torture or imprisonment, providing they had freedom of will and moral responsibility as humans have. As children see no mental differences between animals and humans, so did the whole premodern humankind, Europeans by the age of Enlightenment.⁷⁷

On the whole, magic, religion, and totemism has been stepwise diluting right across the four historical periods, but the sharp gulf between the premodern and the modern world can be seen again here because only the modern world destroyed this belief system totally. Notwithstanding, the pre-axial civilizations such as the ancient Egypt reduced the totemic worldview only a little in comparison to that of the nature peoples, while the post-axial civilizations preserved only some rests of it. It would not have been anymore possible in medieval Europe to adore animals as gods, as it was custom in ancient Egypt or among nature peoples. Medieval Europeans took animals as humans but not as gods (trials against animals), as they did not see humans as gods, diverging in this sharply from nature peoples, pre- and postaxial ancient civilizations, and from medieval China and recent India. I estimate that adoration of divine animals played no great role in the Roman and the Chinese Empire. India is a special case here because it is by today the culture that seems to entail all stages simultaneously, it preserved pre-axial and post-axial stages during the past two millennia. Therefore, it adores by today animal gods such as Hanuman or Ganesh. Further, the pre-axial civilizations such as Egypt or the Pre-Columbian civilizations also maintained the original belief that their rites preserve the mere existence of the cosmos, close to the clear consciousness nature peoples have of that. More precisely, these pre-axial civilizations stood regarding that magical role of humans in the middle between nature peoples and post-axial civilizations.

Conclusion

The whole premodern humankind stood on the preoperational and / or concrete operational stage, while only modern peoples have been attaining the adolescent stage of formal operations stepwise in some past generations. Despite the prevalence of a sharp gulf between the premodern and the modern world it is possible to evidence some smaller developmental stages manifesting in earlier periods. The post-axial civilizations stay on higher psychological stages than the pre-axial stages, and they again have surmounted the stages typical for nature peoples.

Of course, not every progress in technology or culture must be automatically be combined with psychological stage developments. However, it is apparent that the technological and cultural superiority of the archaic kingdoms, in comparison to the abilities of nature peoples, is both caused and accompanied by psychological stage advancements. The same is true regarding the comparison between the pre-axial and post-axial ancient civilizations.

⁷⁷ Evans 1906; Frazer 1994.

Finally, the modern, industrial civilization has not only caused additional psychological stage developments. It is itself rather caused by them, according to a theoretical model that is known as Dialektik von Sein und Bewusstsein, society and mind (G. W. F. Hegel, K. Marx). Accordingly, my new theory rather confirms Hegel and not Marx, to some criteria. Dialectics of society and mind on the hand and materialistic sociology on the other hand contradict to each other, what Marx did not really understand.

Therefore, certain psychological stage developments did not only follow the historical periods mentioned but also caused them regarding their progress. The Greek-Hellenistic culture and education could foster psychological stage development more than ancient Egypt could, and the modern, industrial civilization offers more educational and cultural stimuli to affect psychological stage developments than ancient Alexandria, Rome, Nanking, or Edo. Piagetian Cross-Cultural Psychology, rightly interpreted and applied, can confirm that what history reveals already by itself to a certain degree.

The new theory programme, the structural-genetic theory programme, is obviously necessary to understand the history of the humankind. It has shown already by now that the history of population, economy, society, culture, politics, science, philosophy, law, morals, literature, arts, etc. can only be explained by application of developmental psychology. The discovery that human beings once shared the psychology of children, and attained higher psychological stages only very late, is the greatest discovery ever made in the social and human sciences. It will need a long time for social and human scientists to attain the cognitive stages in order to be able to understand the foundations and implications of this breakthrough properly.

References

- Assmann, Jan (1995). *Ma'at. Gerechtigkeit und Unsterblichkeit im Alten Ägypten* [Justice and immortality in ancient Egypt]. München: C. H. Beck.
- Assmann, Jan (1996). *Ägypten. Eine Sinngeschichte* [Egypt]. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Brunner-Traut, Emma (1974). Altägyptische Sprache und Kindersprache: Eine literarische Anregung [Ancient Egyptian language and the language of the child]. *Studien zur Altägyptischen Kultur*, Band 1, pp. 61-81.
- (1996). *Frühformen des Erkennens. Aspekte im Alten Ägypten*. [Early forms of mind]. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Bühler, C. & J. Bilz (1977). *Das Märchen und die Phantasie des Kindes* [Myth and imagination in the child]. Berlin, Germany: Springer Verlag.
- Cornevin, Robert & Marianne Cornevin (1980). *Geschichte Afrikas von den Anfängen bis zur Gegenwart*. Frankfurt, Berlin: Ullstein. (Original: *Histoire de l'Afrique des origines à nos jours*, Paris: Édition Payot).
- Dasen, P. & Berry, J. W. (Eds.) (1974). *Culture and cognition. Readings in cross-cultural psychology*. London: Methuen & Co.
- Dasen, P. (1977). *Piagetian cross-cultural psychology*. New York: Gardner Press.
- De Sahagún, Bernardino (1989). *Aus der Welt der Azteken* [The world of the Aztecs]. Frankfurt am Main: Insel Verlag.
- Dodds, Eric (1966). *The Greeks and the irrational*. New York.

- 1 Durkheim, Émile (1965). *The elementary forms of the religious life*. New York: The
2 Free Press.
- 3 Elias, Norbert (1982). *Power and civility*. New York: Pantheon.
- 4 Enfield, N. J. (Ed.) (2002). *Ethnosyntax. Explorations in grammar and culture*.
5 London: Oxford University Press.
- 6 Evans, E. P. (1906). *The criminal prosecution and capital punishment of the*
7 *animals*. London & Boston: Faber & Faber.
- 8 Evans-Pritchard, E. E. (1976). *Witchcraft, oracles, and magic among the Azande*.
9 Oxford: University Press.
- 10 Everett, D. (2008). *Don't sleep, there are snakes. Life and language in the*
11 *Amazonian jungle*. New York: Pantheon books.
- 12 Fetz, Reto L. (1982). Naturdenken beim Kind und bei Aristoteles [Thinking about
13 nature by the child and Aristotle]. *Tijdschrift voor Filosofie*, 44, pp. 473-512.
- 14 Fischer, Hugo (1981). *Die Geburt der Hochkultur in Ägypten und Mesopotamien*
15 [The birth of civilization in Egypt and Mesopotamia]. Frankfurt: Ullstein.
- 16 Flynn, James (2007). *What is intelligence?* London, New York: Cambridge
17 University Press.
- 18 Fortune, Reo F. (1963). *Sorcerers of Dobu*. New York: Dutton.
- 19 Frankfort, Henri, Groenewegen-Frankfort, H. A., Wilson, John A., Jacobsen,
20 Thorkild & William A. Irwin (1981). *Alter Orient. Mythos und Wirklichkeit*.
21 Stuttgart: Kohlhammer. (original: The intellectual adventure of ancient man,
22 University of Chicago Press 1946).
- 23 Frazer, J. G. (1927). *Man, god, and immortality. Thoughts on human progress*.
24 London: Macmillan.
- 25 Frazer, J. G. (1994). *Collected works*, ed. by Robert Ackerman. London: Curzon.
- 26 Friedländer, Ludwig (1913). *Roman life and manners under the early empire*.
27 London: Routledge.
- 28 Fustel de Coulanges, Numa Denis (1956). *The ancient city*. New York: Anchor
29 Books.
- 30 Gablik, Suzi (1976). *Progress in art*. London: Thames & Hudson.
- 31 Gil, D. (1994). The structure of Riau Indonesian. *Nordic Journal of Linguistics*, 17,
32 pp. 179-200.
- 33 Gil, D. (2012). How much grammar takes it to sail a boat? (pp. 19-33). In G.
34 Sampson, D. Gil and P. Trudgill (eds.), *Language complexity as an evolving*
35 *variable*. London: Oxford University Press.
- 36 Griaule, Marcel (1975). *Conversations with Ogotemeli*. London: Oxford
37 University Press.
- 38 Grubb, Wilfred B. (1914). *An unknown people in an unknown land*. London:
39 Seeley, Service & Co.
- 40 Habermas, J. (1989). *On historical materialism*. Indiana University Press.
- 41 Harris, Nathaniel (1997). *Hamlin history of ancient Egypt*. London: Octopus
42 Publishing Group.
- 43 Hornung, Erik (1999). *Geist der Pharaonenzeit* [The mental world during the era of
44 the Pharaohs]. Düsseldorf & Zürich: Artemis & Winkler.
- 45 Ibarra, L. (2007). *Creencias, mitos y rituales en el mundo prehispánico. Una*
46 *explicación desde la*
47 *teoría histórico-genética*. Guadalajara: Universidad de Guadalajara.
- 48 Johansson, Sverker (2005). *Origins of language. Constraints on hypotheses*.
49 Amsterdam: J. Benjamins.
- 50 Johnson, Gordon (1995). *India*. Oxford: Andromeda Ltd.
- 51 Karlsson, F. (2012). Origin and maintenance of clausal embedding complexity (pp.
52 192-202). In G. Sampson, D. Gil and P. Trudgill (eds.), *Language complexity*
53 *as an evolving variable*. London: Oxford University Press.

- 1 Le Pan, Donald (1989). *The cognitive revolution in Western culture*. London:
2 Macmillan Press.
- 3 Levinson, S. C. (2005). *Origins of language. Constraints on hypotheses*.
4 Amsterdam & Philadelphia: J. Benjamin's Publishing Company.
- 5 Lévy-Bruhl, L. (1923). *Primitive mentality*. London, New York: The Macmillan
6 Press.
- 7 - (1971). *The 'soul' of the primitive*. Chicago, Ill.: Henri Regnery.
- 8 - (1983). *Primitive mythology*. St. Lucia, New York: The University of
9 Queensland Press.
- 10 - (1985). *How natives think*. Princeton: University Press.
- 11 Luria, A. R. & Wygotski, L. S. (1992). *Ape, primitive man, and child*. Orlando:
12 Deutsch Press.
- 13 Luria, A. R. (1982). *Cognitive development. Its cultural and social foundations*.
14 Harvard, MA: University Press.
- 15 Murowchick, R. (Hrsg.) (2002). *China. Ein geschichtlicher und kultureller*
16 *Streifzug durch die Jahrtausende*. München: Orbis Verlag.
- 17 Piaget, J. & Garcia, R. (1989). *Psychogenesis and the history of sciences*. New
18 York: Columbia University Press.
- 19 Piaget, J. & Inhelder, B. (1969). *The psychology of the child*. New York: Basic
20 Books.
- 21 Piaget, J. (1932). *The moral judgment of the child*. New York: The Free Press.
- 22 - (1959). *The child's conception of the world*. New York: Littlefield, Adams &
23 Co.
- 24 - (1969). *The child's conception of physical causality*. Totowa: Littlefield,
25 Adams & Company.
- 26 - (1974). Need and significance of cross-cultural studies in genetic psychology
27 (pp. 299-310). In P. Dasen & J. W. Berry (Eds.), *Culture and cognition*.
28 London: Methuen & Co.
- 29 Ponzo, E. (1966): Acculturazione e detribalizzazione. *Rivista de psicologia sociale*,
30 13, pp. 41-107.
- 31 Progovac, L. (2012). Layering of grammar: vestiges of protosyntax in present-day
32 languages (pp. 203-212). In G. Sampson, D. Gil and P. Trudgill (eds.),
33 *Language complexity as an evolving variable*. London: Oxford University
34 Press.
- 35 Radcliffe-Brown, A. R. (1964). *The Andaman islanders*. Glencoe: The Free Press.
- 36 Radding, C. M. (1985). *A world made by men. Cognition and society 400-1200*.
37 Chapel Hill: The University of North Carolina Press.
- 38 Roaf, Michael (1998). *Mesopotamien*. München: Christian Verlag. (original:
39 Oxford, Andromeda Ltd. 1990).
- 40 Roeder, G. (1998). Kulte und Orakel im alten Ägypten [Cults and oracles in ancient
41 Egypt]. Düsseldorf: Artemis.
- 42 Rose, H. J. (1926). *Primitive culture in Greece*. London: Methuen & Co.
- 43 Russo, Lucio (2005). *The forgotten revolution*. Berlin: Springer.
- 44 Sampson, G. (2012). A linguistic axiom challenged (pp. 1-18). In G. Sampson, D.
45 Gil and P. Trudgill (eds.), *Language complexity as an evolving variable*.
46 London: Oxford University Press.
- 47 Schneider, Hermann (1909). *Kultur und Denken der alten Ägypter* [Culture and
48 thought of the ancient Egyptians]. Leipzig: Heinrich'sche Buchhandlung.
- 49 Schultze, F. (1900). *Psychologie der Naturvölker* [psychology of the savages].
50 Leipzig: Von Veit & Comp.
- 51 Simpson, J. (2002). From common ground to syntactic construction: Associated
52 path in Walpiri (pp. 298-307). In N. J. Enfield (Ed.), *Ethnosyntax*.
53 *Explorations in grammar and culture*. London: Oxford University Press.

- 1 Snell, Bruno (1975). *Die Entdeckung des Ichs* [The discovery of the self].
2 Göttingen: Vandenhoeck & Ruprecht.
3 Spencer, B. & F. C. Gillen (1904). *The northern tribes of Central Australia*.
4 London: Macmillan Press.
5 Thorndike, Lynn (2003). *The place of magic in the intellectual history of Europe*.
6 London.
7 Werner, H. (1948). *Comparative psychology of mental development*. New York:
8 Follet.

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