

Tracing the Roots of Western Intellectual Tradition: McGilchrist's Analysis of the Axial Age

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This paper considers and analyses the idea propounded by Iain McGilchrist that the foundation of Western rationalism is the dominance of the left side of the brain and that this occurred first in ancient Greece. It argues that the transformation that occurred in Greece, as part of a more widespread transformation that is sometimes termed the Axial Age, was, at least in part, connected to the emergence of literacy which transformed the workings of the human brain. This transformation was not uniform and took different forms in different civilisations, including China and India. The emergence of what Donald terms a “theoretic” culture or what can also be called “rationalism” is best understood in terms of transformations in language, including the transition from poetry to prose and the separation of word and thing. Hence, the development of theoretic culture in Greece is best understood in terms of the particularity of Greek cultural development. This transition both created aporias, as exemplified by the opposition between the ontologies of “being” and “becoming”, and led to the eventual victory of theoretic culture that established the hegemony of the left side of the brain.

Keywords: McGilchrist; theoretic culture; rationalism; Axial Age; ancient Greece; literacy

INTRODUCTION

The Western world is the product of a fundamental dialectic or tension, that between reason and imagination, logos and epos (or mythos). In his celebrated “The Master and his Emissary: the Divided Brain and the Making of the Western World”, Iain McGilchrist claims that such a dialectic is inherently the reflection of the functional asymmetry of the human brain with the left hemisphere of the cerebrum characterised by an analytical capacity, and therefore oriented towards the particular and the factual, and the right hemisphere characterised by greater flexibility and fluidity, and as a result oriented towards the universal and of what lies beyond the factual (McGilchrist 2012). The latter is the realm of nature, of the

soul and of the spiritual; the former is the abode of reason and of religion. Neuroscience claims that both hemispheres react in different ways to external or environmental stimuli, and hence configure and articulate the data of the world of experience and the perception of self in very different ways so to produce two different and often conflicting accounts.

According to McGilchrist, for centuries the integrated asymmetry of the two hemispheres produced harmonious syntheses of the world of experience in which an oblivious self was immersed and with which it identified. This condition may be similar to that of the Rousseauian “noble savage”, in a re-visited fashion, or perhaps with the pristine and mythical “Golden” age of humanity, a common myth in the cultural repertoire of many people. Recent developments in anthropology and ethnography have provided a satisfactory amount of data in order to plausibly assume what human beings from the Neolithic were like, thus overcoming the limitations and perils of nineteenth and early twentieth century anthropology that used extant examples of so-called Stone Age peoples to understand Neolithic humans (Lee 2018). The pioneers of anthropology and cultural history, such as (Lucien Levy-Bruhl [1922] 1983, pp. 144–71), erroneously claimed that the thought of “primitive” peoples was “pre-logical” and thus it was fundamentally “participatory” or mimetic. Such an individual apparently would have lacked self-consciousness and would have lived immersed in the world of experience as an object alongside other objects. Whether this represents a stage in the evolution of human thought or just another type or mode of thinking (Cole and Scribner 1974) remains a matter of heated discussion among scholars. Louis Liebenburg (2012) argues, for instance, that the origin of scientific reasoning may be traced in the art of tracking employed by early hunter-gathers as it involved intellectual and creative abilities similar to those used in mathematics and physics (Halton 2014). It appears, in fact, that our hunter-gatherer ancestors had attained “scientific knowledge” of spoor and animal behaviour and of the properties of particular plants through empirical observation and complex operations of inferential logic, leading the author to conclude that such form of reasoning may well be an innate, instinctive ability of the human mind. It is undeniable, however, that at one point in the temporal progression of human history, during the so-called “Axial Age”, a series of profound changes in the realm of human experience occurred. These changes prompted a fracture in the original unity of the self and the world and the concomitant rise of a deep and widespread sense of uncertainty which caused individuals to turn inwards prompting the development of reflective thought and the discovery of the “self”, the latter perceived as an entity and individualising constituent of reality. It was this discovered self-awareness along with the increasing complexity of life characterising the Axial Age which challenged traditional understandings of the world and of the human place in it, prompting individuals to embark on a quest

for ontological certainty and for meaning. Thus, the homo ethicus, the moral human being, was born.

The identification of what can be regarded as an epistemological break in the historical record was first posited in 1873 by John Stuart-Glennie who in his “new” philosophy of history described the phenomenon as a sort of “moral revolution”. The theory was taken up and popularised a few decades later by the German philosopher Karl Jaspers [1953] (2010) who coined the term “Axial Age” to refer to this time of deep change. The theory, which has experienced a revival thanks to the works by Karen Armstrong (2006) and Robert Bellah (2011), postulates that there is a key moment in human history across the major civilisations of Eurasia when human thought developed, especially in the direction of analytical thinking and ethics. This revolution in thinking apparently began around 500 B.C.E and its key figures are often considered to be Socrates, Confucius, and Buddha, although the list can be extended to include the Israelite prophets, other schools of Chinese thought which developed during the period of the Warring States, Zoroaster in Persia, and various thinkers in the Brahminic tradition. It can also be further extended in time and expanded in space to include the later developments of Christianity and Islam. What may have contributed to the creation of this particular “structure of the conjuncture” (Sahlins 1981) was the increase in the volume of trade along the so-called Silk Roads, namely that vast network of land-based and maritime trade routes recorded since the time of the Western Zhou dynasty (1050–771 B.C.E), and which, according to historians, reached its peak in the second century C.E. (Whitfield 2019). The intensification and expansion of trade created the conditions that led to urbanisation and state-building.

Ethics, and the desire for a measure of ethical certainty, are seen as crucial to the Axial Age and this aspiration has often been connected by scholars to the breakdown of aristocratic caste dominance and rule, and of what the aristocrats had seen previously as a self-evident, innate set of “virtues”, which in the fourth century B.C.E. Plato (2013) then formally reformulated in his “Politeia” or “Republic”. Plato’s virtues are wisdom (σοφία), courage (ἁνδρεία), temperance (σωφροσύνη), and justice (δικαιοσύνη). This would seem to be the case also in China and Rome. In Greece, as in Rome, this can be identified in the widespread desire at this time for written law codes so that justice may be subtracted from the arbitrary interpretation of the aristocracy and be generally available to all citizens of the polis. Democracy or popular government, in fact, was first and foremost defined as isonomia, “equality of law”. The philosophical activity of both Plato in Athens and Confucius in China can be viewed as attempts to re-state aristocrat virtues and the power of an aristocracy, on more solid foundations (Gellner 1959), and protect them against a “system of values” advocated by the emergent mercantile classes, which lacked a tradition on which to found their claims. Plato was, of course, a member of the aristocratic faction in Athens. His uncle, Critias,

was one of the Thirty Tyrants. It was the search for justice, as exemplified by the constant call for written law codes, which caused the transition during the Axial Age from a shame-culture to a guilt-culture (Dodds 1951, pp. 28–63) as exemplified by the development of Greek tragedy.

It is evident that, because of the variety of particular historical, ecological, and cultural configurations, the answers which were given to the problem of justice and ethics by the various civilisations were quite different. While Plato sought to establish ethics on a more logical and rational basis, a tendency taken even further by his former student Aristotle, Confucius made a much more direct appeal to Chinese aristocratic traditionalism (Hall and Ames 1987). By contrast, in India, Buddha came to the conclusion that, as it was impossible to assert anything with any degree of certainty, the best option was to suspend judgement and seek Enlightenment, the only means for grasping the noumenal Absolute beyond the phenomenal Multiplicity. Although it has been argued that the Greek Sceptic Pyrrho of Elis adopted the Buddhist position (Beckwith 2015), it appears that it was primarily in Greece that what can be described as the rationalist option became the preferred one. It is evident that the developments of the Axial Age led to different cultural pathways being taken in different civilisations. This, however, did not mean that those civilisations became hermetically sealed entities unable to absorb elements from other civilisations. Beckwith, in fact, has demonstrated that early Buddhism reached ancient Greece through Pyrrho, the father of Western scepticism, a current of thought which remained part of Western culture, its most famous modern exponent being David Hume (Beckwith 2015, pp. 138–59). Ideas and beliefs have clearly moved around Eurasia, but it is clear that that they were used or adapted differently. Rémi Brague (2002), for instance, argues that a crucial feature of Western civilisation has been its capacity to absorb and, it should be said, re-configure, ideas and practices from other places. For a variety of reasons, the West selected and integrated those ideas and practices into a cultural pathway in which rationalism was accorded a primary and privileged position and it was probably this that allowed for Western dominance. New technologies, such as printing, allowed for the development of a hyper rationalist culture based on reading and a reliance on written documents. By contrast, as Molly Greene (2002) points out for instance, the commercial practices of seventeenth century Ottoman Empire were still largely oral. Printing only really took off in the Islamic world in the nineteenth century. It may well be the case that mass literacy has transformed the nature of Islam allowing for the emergence of Islamist fundamentalism, which derives from a literal, and often uncritical, reading of written texts. William Graham (1987) argues, in fact, that the oral experience of religious texts is substantially different from that of reading written texts and that the medium used to access knowledge will produce different understandings. Francis Robinson (1993) argues that the massification of literacy

did indeed impact Islam. What the Greeks pioneered may yet become the condition of the whole of humanity.

Thus, it appears that the Axial Age marked the beginning of the dominance of the left hemisphere of the human brain. Iain McGilchrist argues that it was at this time that human beings realised that the “normal ways of construing the world” were inherently misguided and that “an awareness of radical unauthenticity” began to clearly emerge. McGilchrist (2012, p. 266) believes that the breakdown of the integrated asymmetry of the human bi-cameral brain is proven by the advent of Greek philosophy in the West, namely the attempt of human beings to understand and explain the domain of experience by means of the human faculty of reason alone. One could question whether this was indeed the case. The theory, in fact, works on a retrospective reading of the history of philosophy. It does not explain, for example, Socrates’s daemon or later developments in philosophy such as neo-Platonism and its Late Antique theurgic developments, and the persistence of mysticism. Philosophy in ancient Greece, and later in Rome, was primarily a way of life, and therefore could be understood as more than being just about reason. Furthermore, although McGilchrist’s thesis may seem true, it fails to explain how one hemisphere of the human brain, namely the left hemisphere, characterised by an analytical capacity and an orientation towards the factual, came gradually to dominate. His theory or paradigm appears to rest on a premise, which has all the characteristics of an abstract axiom assumed as self-evident and hence cannot be confuted. It is, in fact, insufficient to argue that “the achievement of a degree of distancing from the world” is the cause of the dominance of one of the hemispheres of the human brain. This means merely turning the effect into a cause. What must be explained is the profound and, probably, distant causes which led to the fracture of the original integrated asymmetry of the two hemispheres of the human brain which found its visible expression in the West in the emergence of Greek rationalism or philosophy.

This essay is an attempt to explore the historical or experiential causes which may have contributed to the dominance of the left hemisphere of the human brain and, as McGilchrist argues, characterised the historical development of the Western world.

DISCUSSION

The Brain and the Hand

It is impossible to say whether an original “integrated asymmetry” in the brain ever existed. What can be said is that analytical thought, the forte of the left hemisphere of the brain, cannot be utilised effectively without some additional technical advance, and that advance is the development of writing. Being able to write down pictograms or syllabic or alphabetic representations of sounds enables

human beings to perform mental functions that are not possible in a purely oral society. Illiterate or pre-literate people are just as intelligent as literate ones; the former just lack the tools required for certain types of intellectual operations. The same is true for the representation of numbers; try, for example, doing multiplication or division with Roman numerals, or having a sophisticated set of accounts. Zero or cypher was a major invention, originating in Vedic India, and its introduction to the West by the Arabs during the Middle Ages simplified once very difficult and complex operations, opening up the human mind to calculations involving the notion of infinity, a concept which the ancient Pythagoreans once associated with the unintelligible, the irrational, and evil. In the Western world and culture, in fact, there was a time, in living memory, when slide rules were the most advanced means of calculation, which now electronic calculators have consigned to oblivion.

It appears that the introduction of a simplified phonetic system, known as the alphabet, whereby individual consonantal and later vocalic sounds are represented by signs or graphemes, allowed for the fixation of a fluid oral tradition, the diffusion of literacy, and the rise of reflective thought. This is because once something is written down it becomes a fixed, and often authoritative, point of reference, so that stories cannot be altered easily as circumstances change (Goody 1986). A written work makes oral tradition congeal into something much more rigid such that the written word exercises a tyranny over what Bergson (1927, p. 52) called the *durée réelle*. The free imagination of the *durée réelle*, in fact, comes to be constrained by the authority of the text. It cannot “go with the flow”; it is confronted by a reality which is separate from lived experience. It may well be this fixed, and somewhat artificial form of experience which creates “distancing” as it confronts one’s immediate world of experience. This is in line with Nietzsche’s observation about animals and their inability to have a sense of history (Nietzsche 1983, p. 60).

However, it is also worth remembering that oral traditions usually co-exist, often in tension, with written ones, as in the case of Judaism in which, alongside the written law or Torah she-bi-khetav, is the oral law or Torah she-be’al peh (Cohen 1959). It is only in the longer term, it can be argued, that artificial experience, *le temps objectif*, comes to have equivalent status with the *durée*; the greater danger is that it will come to seem more real than lived experience. The central role that history plays in the Western tradition is evidence of the tyranny of the written word over the *durée réelle*, and significantly the birth of Western historiography coincides with the introduction of writing to Greece. The real question, however, remains how, and if, the Greek experience was different to that occurring in other parts of the world at approximately the same time.

That a technical advance should have an impact on the way the brain operates seems to be fairly obvious as human ecology is driven by the same “laws of economy” directing linguistic development (Martinet 1955, pp. 94–152) and

which favour the development of a set of practices within a human group that produces optimal life conditions thus maximising the chances of survival (Basalla 1988). Although this may be very difficult to prove empirically, particularly in relation to a historical era which is long past, more recent studies appear to confirm the hypothesis. The work of A.R. Luria in studying the passage of Uzbecks from a pre-literate and oral culture to one characterised by a marked degree of literacy in the 1930s provides, in fact, a satisfactory attestation that the development of literacy does indeed lead to individuals coming to think in a more analytical fashion. Luria (1976) was able to study groups of people at different stages of becoming literate, from non-literate to semi-literate to literate. Through interviews with each of these groups, Luria demonstrated that the acquisition of literacy did indeed stimulate what is best described as a capacity to exercise analytical thought. This meant a transition from a descriptive, synthetic, and concrete approach to topics to one which saw the subjects able to examine objects in a more objective, analytical, and abstract fashion. Even in an area such as the apprehension of colour, there was a transition from understanding colour in terms of concrete material objects to one in which colour was viewed in a more abstract fashion, as an accident rather than something inherent to the substance of the object. This can be seen in English where some colours still retain their concrete referent, such as orange, chocolate—for some Uzbecks for instance, certain colours were related to animal excrement—but generally colour is understood in a much more abstract fashion (Bergson 1927, pp. 20–47). In another set of questions, Luria (1976, pp. 48–97) demonstrated that the more literate were able to define a concept as opposed to the less literate who could only describe what something was. This indicates that literacy may facilitate the development of inductive and deductive methods of inquiry in order to understand reality. The transition described by Luria, and the way in which the name of something is separated from its concrete material manifestation in the world, is reminiscent of the way in which qualities are discussed in the Socratic dialogues of Plato (2005, pp. 342–45; 1926a, 1929, pp. 118–25), and later in Aristotelian logic (Aristotle 1938). It appears that the growth of literacy is linked to the decoupling of idea (eidon) and object, a fundamental feature of the way we think today and one which is too often assumed to be “natural”. The transition from the concrete res to the abstract eidon can be, however, detected in the development of writing itself. In so-called proto-writing systems, many phonemes were, in fact, represented by what may be referred to as “natural signs”. The process of conventionalisation is connected with a process of abstraction, whereby a sign ceases to refer to a particular referent and gains expressive autonomy. The fact that surviving texts indicate the simultaneous presence of natural and arbitrary signs does not constitute sufficient evidence to argue that the latter do not represent a later development. The simultaneous presence of natural and arbitrary or conventional

signs in later texts can be merely considered the result of a process of conventionalisation (Naveh 1997).

The real issue with Luria's work, which was conducted in the 1930s but not published until the 1970s, is that it is a unique, one-off study, undertaken to assess, and justify, the effects of rapid state-driven modernisation in the Soviet Union. It is a single snapshot, even if it is an illuminating one, of a key transition in human development. Other studies to explain the effects of the introduction of literacy on pre-literate populations were undertaken during the period of decolonisation. In this context, as in that of Luria, literacy is connected with economic and social development, which impedes a full appreciation of the psychological effects that literacy produces by the introduction of new modes of production or societal relations (Foster 1962). Goody (1986, 1987, pp. 15–34) considers the development of writing in Mesopotamia, for instance, in terms of the lists created by officials, initially by the Sumerians and subsequently by their successors, which may well be considered an embryonic form of historical writing. Parallels can be found in the fasti or the annales among the Romans (Feeney 2008) and the lists of the archontes (Develin 2003). and the various genealogies among the ancient Greeks (Prakken 1943) Jan Assmann (Assmann 2012, 2015) argues that the first step in the invention of writing is represented by the development of a written culture in the form of what he refers to as “sectorial literacy”, namely writing used for specific purposes, may these be economic or political. This phase is then followed by the development of “cultural literacy”, which arises when “cultural memory” is penetrated by writing, leading to the “canonisation” of selected cultural texts from the past and regarded as authoritative. In a similar vein, Chase Robinson (Robinson 2002, pp. 8–13) has argued that the development of Islamic historical writing is connected to the change from an oral culture based on stories to a bureaucratic imperial culture, especially under the Abbasids.

The other issue which requires investigation in this regard is what it meant to be literate in the world of ancient Greece. Certainly, it was not the same thing as being literate today. Most individuals would not have read on a daily basis, and it is likely that it would have been more common to be read to than to read (Thomas 1989, pp. 15–34). The democratic culture of the polis, in fact, was largely oral and hence based on performance (Hall 1998, pp. 219–39), and aristocratic youth in Athens were trained to speak well rather than to write well, as one might expect in a performance culture. Yet, how we understand today the conceptual capacities of the Greeks is the residue of that performance culture crystallised and transmitted in written form. That the fixation of oral texts into written ones affected the meaning and nature of the text is beyond dispute (Ong 1982, pp. 77–114; Havelock 1976, p. 197; Parry 1971); however, the question one should ask is whether, and how, the existence of writing affected the way in which oral performance was conducted. For example, it is clear that the written texts of the

Roman orator Cicero are not identical to the speeches he had delivered orally as it is possible to surmise from his stress on oratorical performance. It is obvious, in fact, that oral performance continued to play a major role in both Greek and Roman societies as is demonstrated by the development of the art of rhetoric. In the case of the Greeks, there is no connection between the development of writing and that of a bureaucratic apparatus. The polis, even in its non-democratic form was almost entirely non-bureaucratic, leading one modern observer to describe Athens as a stateless society (Berent 1998, p. 333). The development of logical forms of thought in ancient Greece was clearly not a facet of the development of the state and of the need to develop technologies required to administer a state. Ancient Egyptian and Mesopotamian polities, as indicated earlier, had in fact developed complex bureaucracies as early as the third millennium BC and in which the invention of writing was just a stage in the social and political evolution of the polity (Nissen 1990, pp. 65–128).

Utterance and the Mind

Contrary to the widely accepted theory, which posits transcendental truth at the centre of the quest of the axial age, the search and attainment of certainty and predictability were the driving force of the “Great Transformation”, as Karen Armstrong labels the Axial Age. The truth pursued was not the disclosure of some inscrutable and self-evident reality, but logical truth. The tool adopted was, in fact, logos, language driven by reason, not epos or mythos, poetic language powered by the freedom of imagination. For centuries, the two hemispheres of the brain had worked in unison creating admirable synthesis of the world, a world in which the gods spoke to and roamed the earth with human beings oblivious of the transience of human life. This person is that described by Homer in the Iliad, one who lacked awareness of the wholeness of his corporeal and spiritual self, whose perception of the world was variegated as demonstrated by the variety of verbs used to denote sense-perception, such as the act of seeing, as observed by the early twentieth century scholar, (Bruno Snell [1953] 1982, pp. 1–4). Homeric persons experienced reality through sense perception and identified the voices of their own conscience with an external reality. Thus, in the Iliad, Aphrodite prompts Helen, disguised as an old wool weaver who the latter knew and cherished while living in Sparta, to join her lover Paris in the chamber, and causes her heart to leap in her chest (thumòn enì ste`thessin órine`), while reason causes her to rebuke the goddess for tempting her (Homer 1999a, pp. 156–9). Interestingly, Helen addresses the goddess by using the word daimoníē`, a term which will recur later in Plato’s Socratic dialogues to indicate the inner voice of conscience (Plato 2005, pp. 112–15). The poetic dialogue of the Iliad can be easily construed as a moment of self-reflection, of an internal conflict between the urges or yearnings of the heart and the moral imperatives of reason. Analogous

dialogues can be identified in the *Iliad* and the *Odyssey* and which can be easily interpreted as soliloquies. Nonetheless, Homeric people are still dismembered and unconscious entities who do not perceive the world as distinct from their selves, and consequently lack, as McGilchrist argues, the capacity to “distance” themselves from the world.

From a historical-cultural perspective, it can be argued that the Axial Age was the culmination of a gradual process of “distancing” or, as (Heidegger [1962] 2001, pp. 149–53) claims, of becoming conscious of being-in-the-world. Such a process had begun to manifest itself as early as the eighth century B.C.E. and coincided, as stated earlier, with the reappearance on Greek soil of writing, and the expansion of the geographic and cultural frontiers of the Greek world. During the so-called Greek colonisation, the ancient Greeks came into contact with ethnic groups who held different beliefs and understandings of the world. This situation of “contact” not only caused the Greeks to question their own beliefs and assumptions, but also prompted or made them aware of the need for self-definition. Self-reflexivity is, in fact, a component of “otherness”. It is an accepted fact that the experience of the “other” involves the awareness and experience of difference, namely of separateness but also of contiguity or complementariness in the world (Thomas 1989, pp. 143–50). As (Heidegger [1962] 2001, pp. 156–57) points out, the consciousness of Being-in-the-world (or *Dasein*) essentially involves a “Being-with”, so that the “other” becomes constitutive of the world and of the self. Thus, the Greek man began defining himself vis-à-vis the encountered “other”, whether the latter be Persian, Egyptian, or Scythian. The works by Herodotus and Aeschylus cannot be fully understood outside this paradigm. Presumably the Greeks, as archaeological evidence indicates, adopted the Phoenician alphabet in the middle of the ninth century B.C.E. This innovation was the result of their encounter and prolonged interaction with the eastern peoples in the major port cities along the coast of Asia Minor (Osborne 1996, pp. 107–12). However, this situation of contact did not lead only to the adoption and introduction of a new medium of communication but also set in motion the complex process of “othering”. It was, in fact, these two parallel processes of “othering” and writing, which led to the emergence of self-reflection and the discovery of the self. The effects of such a process are already visible in the frequent use of similes in the later strata of the Homeric poems, in particular the *Odyssey*, whereby human beings are compared to animals or plants. The simile, in fact, is not just a mere figure of speech. (Bruno Snell [1953] 1982, pp. 191–226) argues that the simile involves a process of observation and comparison which played an important role in the transition from myth to logic in ancient Greece as it allowed for the identification of connections, comparisons, and relations, and thus spurred the search for the origins (*arché*) of things. The simile, therefore, may be considered the possible locus in which the rupture of the integrated asymmetry of the two hemispheres occurred, as the poetic product of the imagination is offset

by empirical evaluation (Homer 1999a, pp. 284–85; 1999b, pp. 298–99; Ricoeur [1977] 2003). As Albin Lesky (1982, p. 91) points out, through the similes Homer moves beyond the borders of the heroic world he describes and expresses the fullness of the world in which he himself lives.

Furthermore, experience often produces needs that prompt complex processes of problem-solving. It is in the domain of experience, in fact, that changes to the way people think and behave occur. In the fourth century B.C.E., a new historical configuration emerged, one which produced deep changes in the structures of human existence along with new ways of perceiving and understanding reality. This new culture replaced the old service provided by aedes and rhapsodes whose words and repertoire of fixed formulae were now crystallised in the written text which destroyed its original fluidity and flexibility. The phenomenon of the city greatly contributed to spark a revolution in thought in archaic Greece. In the sixth century, the crowded agorá had replaced the megaron, and pluralism had broken the apparent spell of unity. The needs produced by the pluralistic nature, unpredictability, and the rapid pace of change characterising the urban settlement gave rise to questions regarding the origin of the universe, the existence of the divine, the meaning of human life, and how to maximise it. Human beings began to wonder pensively, and to write. The time of innocence, dominated by the Homeric “blind singers” and their endless weaving of oral songs, had thus come to an end. Although it is exceedingly difficult to determine the relation of language to thought, it is undeniable that thinking is associated with both consciousness and verbalisation (Jackendoff 1996, pp. 1–24). From what has been said above, it is clear that the rupture of the integrated asymmetry of the two hemispheres of the brain began to emerge in the context of language and, in particular, in the structuring of language (grammar) produced by the adoption of writing. Once poetry and the similes it contained were congealed in the written text, they became the object of reflection and commentary, and were open to the scrutiny of the left brain, which began questioning, comparing, and ordering. Until recent times, commentary was one of the primary modes through which the Western mind expressed itself intellectually; the commentary was simultaneously reflective and analytical (Grafton et al. 2010, pp. 225–33). Through this process, human beings finally became aware of their individual existence and conscience, thus engendering a hiatus between the self and the world of experience. This explains why at the turn of the sixth century Greek philosophy emerges to answer the big questions wrought by the crisis of values and beliefs caused by the discovery of the inherent dichotomy between the thinking person and the ceaselessly changing world. This crisis extended to all aspects of human life including the belief in the immanence of the divine. The gods, who until then had directly intervened in human affairs and had fought on the battlefields alongside ordinary human beings, were now expelled from the world and cast onto a transcendental level, thus engendering other irresolvable dichotomies, between the

divine and the human, the divine and the world, and the human and the world. The emergence of dichotomies or fault-lines, perceived or produced by the use of the left brain, were, according to McGilchrist (2012, pp. 209–38), compounded by the parallel activity of the right brain which perceived the world and the self as a seamless identity or reality. The search for the origin of the universe began. The Milesian and Eleatic philosophers were the first. Their quest encountered and produced extreme and unsolvable paradoxes as they tried to verbalise their intuited theories. It was the verbalisation of their theories which produced the paradox, not their intuited postulates. The intuition that water, air, or fire constitutes the arche from which all things derived cannot be regarded as a fallacy or error of reasoning.

Language constructs reality and, as linguist Edward Sapir (1924, pp. 149–55) once stated, it may serve as a filter through which the world is constructed for the purpose of communication and, therefore “the mould of thought is typically a linguistic mould.” Sapir’s disciple, Benjamin Whorf, went further arguing that language determines thought, that different grammars produce different worldviews, and thus metaphysics inherently depends on syntax (Carroll 1956, pp. 239–40). Although these theories have been widely confuted, it is undeniable that language inevitably conditions or shapes the pragmatic context, and that translation is often thwarted by the inability to grasp and understand the particular semantic universe of an ethno-linguistic community (Greimas 1987). The way in which we communicate determines situations and contexts in which human actions take place, and that the rules of grammar operate to provide the contents of thought with the capacity of being intelligible and transmissible. As McGilchrist (2012, p. 102) observes, both hemispheres of the brain are involved in the production of language with several right hemisphere regions being homologues of areas in the left hemisphere which are essentially involved with language production and comprehension. These right hemisphere regions, however, are also connected with the mediation of musical performance and experience, hence with human emotion and imagination. This would explain why the early texts were written in the form of poems. Poetic language, in fact, is characterised by rhythm (i.e., “flow”) and melody (i.e., “song”) and has an evocative and emotional nature as it charges words with intense intuitive meanings. As the father of Western rationalism, Socrates, states in Plato’s *Phaedrus*

(Plato 2005, p. 424), “our greatest blessings come to us by way of madness (*δία μανίας*)”, and madness, the irrational, was an essential component of the guilt culture of the ancient Greeks (Dodds 1951,

pp. 28–50). It would be impossible to comprehend the tragic poetry of Sophocles, or Greek tragedy as a whole for that matter, in which rhythm, dance, and music work to produce catharsis; and Greek tragedy is the realm of Dionysius, the god of ecstasy and of the irrational par excellence. Music, in fact, was an important aspect of Greek tragedy for its capacity of stirring deep

emotions, which words could barely produce, and for its therapeutic and moral effects (Plato 1926b, pp. 10–13). This evocative and emotive capacity is strengthened by the metres of Greek poetry, which by imitating the movement of the feet on the ground as arsis (raising foot) and thesis (lowering foot) alternate, create the impression of rhythmic dance (Halporn and Ostwald 1980, p. 122). Through mimesis, language takes possession of the realm of reality thus disembodimenting the nomen from the res. As Merlin Donald (2012, pp. 47–76) has argued, human culture was initially a mimetic culture in which meanings were articulated through bodily actions and gestures, and language was absent or still in its embryonic stage. Once language acquired its expressive and communicative function, mimetic culture was superseded by mythical culture in which poetic language gave rise to myths that provided the structures for social and cultural organisation. It will be then prose, with its sophisticated figures of speech, that finally disconnected language and reality and provided the possibility of “universalist” discourse and hence the rise of a theoretic culture, namely that represented by the Axial Age.

It is thus possible to argue, in evolutionary terms, that mimetic culture, characterised by “alogia”, represents the dominance of the right hemisphere of the brain; poetic mythical culture, the moment of equilibrium; and theoretic culture epitomises the triumph of the left brain.

It is known that the metres of Greek poetry are a later stipulation when Hellenistic scholars tried to retrieve the original intellectual and spiritual atmosphere in which poetic texts had been produced. However, this does not falsify the assumption that poetic language was the first medium through which the contents of the human mind were expressed. This is amply testified by the fact that the first philosophers, such as Thales, Anaximander, and Parmenides, still standing in the furrow traced by the Homeric tradition, expressed their theories in verse, mainly hexameters. That this particular mode of expression was deemed able to convey authentically and unequivocally the contents of knowledge, seems to be demonstrated by Plato in his dialogue, *Theaetetus*, (Plato 1921, pp. 154–5) in which “Homeric language” is used to describe Parmenides: “To my eyes, Parmenides is, in the words of Homer, ‘worthy of esteem and awe.’”

Once the aporias produced by language, however, became evident, the aphorism, an “apophantic” fragment of thought cut off from the context of discourse, was used as in the case of Heraclitus. This could explain the often-obscure nature of some of the writings of the early philosophers as they struggled to find a clearer and intelligible language to express the contents of thought.

From what is stated above the search for the causes leading to the divine becoming transcendental and the emergence of ethics should be traced in the linguistic context. Language, in fact, as the late eighteenth century German philosopher, Wilhelm von Humboldt (1999, pp. 25–64), argued, is an intrinsically and exclusively human product. It is not just the means by which human beings

possess the world but the very means which allows them to have a world at all: languages, in fact, encapsulate and reflect worldviews. Aristotle had also stated that the linguistic structure and the structure of reality appear homogeneous and could be juxtaposed, since the former always appeared to imply the latter. Consequently, he concluded that logic was the tool (in Gr. organon) for exploring reality. It is through language that man makes sense of the world and therefore the “hermeneutic experience is verbal in nature” (Gadamer 2004, p. 440). The “Great Transformation” thus took place within the linguistic context and consequently led to the re-structuring of existing worldviews.

A rapid survey of civilisations, which emerged on the historical scene during the Axial Period, validates this theory. In Zhou China, the second phase of which corresponded to a time of political and social upheaval and fragmentation, culminating in 770 B.C.E. with the so-called “Spring and Autumn Period”, which lasted until 476 B.C.E., Confucius initiated his philosophical activity. Confucius’s teachings were prompted by his reflection on the crisis of the Zhou Dynasty. He believed that the current social disorder stemmed from the failure to call “things” by their “proper names” and identified the solution of the problem in the “rectification of words” or Zhengming. In *Analect XIII, 22* Confucius (1996, pp. 81–2) states that the sage-kings of the early Zhou selected names which corresponded to “actualities” or “existents”. Confusion in the name-thing relation, caused by later generations, led to moral decay since it had become impossible to distinguish between right and wrong. Only a man who cultivated *te* or *de*, namely “virtue” or “moral force”, would have been able to attain good and harmony (Confucius 1996, p. 86). Confucius’ attitude to tradition exemplifies the paradigm shift in thinking. He is reported as having stated to his students: “I stand in awe of the spirits but keep them at a distance”, a statement which could be regarded as an intimation that the celestial realm was above and beyond man’s comprehension. His practical attitude was evident in his belief that natural phenomena, such as earthquakes and floods, could not be interpreted as the will of heaven (Creel 1960). In the short term, however, Confucianism lost out to legalism, essentially a Chinese equivalent of both Western Machiavellianism, only more ruthless, and of the ancient Indian Arthashastra as formulated by Kautilya (2000). It was this legalism, however, that allowed for the unification of China through its brutal use of power, but which seems to have been also inappropriate or redundant once unity was achieved under the Han.

One could also argue that the spread of Hellenism also required a ruthless doctrine of power, as discussed by Thucydides in the Melian Dialogue, and such as practised first by Alexander, and then by the Romans. The latter adopted a form of “ethical” Stoicism, once the empire had succeeded. Perhaps there is also a similar case for Asoka whose conversion to Buddhism caused the traditional policy of conquest by force or *digvijaya* to be replaced by that of “conquest by righteousness” or *dharmavijaya* (Thapar [1961] 2012). Hence the Axial Age is

also a preparation for a practical Machiavellianism which may very well be the consequence of the new way of thinking and “othering” which the Axial Age encouraged, and which involved a violent amorality in ethics.

While Confucian teachings were spreading in China, in the Indo-Iranian region the Vedic tradition was experiencing a revival through the teachings of Zarathustra in Persia and of Siddharta Gautama in the Indian subcontinent. In the sixth century B.C.E., the teachings of Zarathustra, whose chronology is still a matter of debate among historians (Boyce 1979; Gnoli 1980), became the foundation of the imperial ideology of the Achaemenid kings, who undertook an aggressive policy of expansion with the aim of establishing a “universal empire”. Zarathustra upheld the need for men to act morally, to speak the truth and to reject lies and deceit. His understanding of the world was based on the linguistic dualism of Arta, truth, and Druj, lie. Zarathustra, according to Boyce (1979, p. 29), was the first to teach doctrines promoting individual judgement, punishments, and rewards in an afterlife, the future resurrection of the body, and the Final Judgement, doctrines which were later to become articles of faith in the three major monotheistic religions of Judaism, Christianity, and Islam. The Avesta, which collected the various maxims of Zarathustra, reveals a new ethics, anthropology, and theology. Zarathustra, in fact, intimates his followers: “May your mind be master of its vow; may your soul be master of its vow” (Boyce 1984) statements which have their parallel in the maxim of the Delphic oracle “know thyself” (γνώθι σεαυτόν), a call for introspection, for self-reflection, an act of “self-reflective thought” distinct from God and the world (Burkert 1985, p. 116).

In pre-Mauryan India (520–320 B.C.E), Siddharta Gautama, known as the Buddha, was providing a different interpretation of the Vedic tradition, which had parallels with that of Zarathustra, by professing a soteriological doctrine founded on the discovery of dharma, or truth, and which he translated into a set of norms of behaviour (sila or vinaya) (Stcherbatsky 1970). The emphasis of Gautama’s teachings was on the individual’s capacity to master his own desires and on his capacity to develop personal merit or worth. In stark contrast with traditional Vedic teachings, the Buddha claimed no special or secret knowledge or revelation, but merely aimed at offering heightened insight into existing ones. It was his later followers that transformed Buddhism into a religion thus spurring a Hindu reaction which led in the third century B.C.E. to the development of the six schools of Hindu philosophy concerned with the study of Pramana (knowledge). Among these was the Nyaya School which developed a system of logic, strongly resembling that of Aristotle (King 1999, pp. 39–40). According to the Nyaya logicians, words were endowed with the God-given capacity to represent a particular object. In fact, knowledge or pramana of different things could not have been attained unless there was a common source of knowledge which they identified with God. Perception and not language, according to the Nyaya

scholars, was the foundation of knowledge since it involved a direct and unmediated apprehension of a real world of independent objects composed of indestructible atomic substances. The grammarian philosopher Bharthari, however, rejected the Nyaya view that perception did not involve language arguing that knowledge would have been impossible without the mediation of *sabda* or linguistic forms (King 1999, p. 150). The Sanskrit grammarian and mathematician Katyayana (third century B.C.E), in fact, stated that the word-meaning relation was *siddha*, namely given to man by the eternal God and that, although the object the word referred to was non-eternal, its meaning or *artha* was. Connected with the developments of Nyaya logic was the Mimamsa School, which claimed that the source of knowledge and Dharma (virtue) should be sought neither in sense-experience nor in inference but in “verbal cognition”, namely the knowledge of words and their meanings. It was in the fold of Mimamsa logic that atheist and secular stances began to appear. Mimamsa, in fact, de-emphasised the importance of salvation (*moksa*), central to Vedanta mysticism, and placed more emphasis on the performance of karma or the natural “law of consequence” resulting from action, as enjoined by the Vedas. This will eventually lead to the rise of an atheistic-materialistic-sceptic movement in Hinduism known as the *Nastika-Carvaka* School, which claimed that the only truth attainable is that of the *hic et nunc* or *Loka* (world) (Mueller 1899; Zimmer 1951). These trends in Hinduism were prompted by the activity of the Buddha and the spread of Buddhism, a period which coincided with the rise of monarchies and republics in the subcontinent and which culminated with the kingdom of Asoka (Keay 2000, pp. 37–55).

In Palestine during the reign of Josiah, a set of civil and religious reforms, outlined in the book known in Hebrew as the *Devarîm* (words), were gradually coming into being, prompting the prophetic activity of Jeremiah. As Karen Armstrong (2007, p. 23) rightly observes, the Deuteronomic reforms were not, in fact, welcomed by all: the prophet Jeremiah, although agreeing with many of the reformers’ aims, nurtured strong reservations about a written scripture, which could have subverted tradition and encouraged a superficial mode of thought, which concentrated on information rather than wisdom. He, in fact, claims (Jeremiah 1994, pp. 1310–11):

How can you say that you are wise and that you know the laws (*torôt*) by which I rule you? Look the laws have been changed by dishonest scribes. Your wise men are put to shame; they are confused and trapped. They have rejected my words (*devarîm*): what wisdom (*hakma`h*) do they have now?

The incorrect use of words, as Jeremiah appears to imply, had the capacity to subvert an existing worldview. It was the Deuteronomic reforms, coupled with the experience of the Babylonian exile, that led to the Jewish God being understood

as transcendental and the fragmentation of the Jewish worldview, marked by the rise of hermeneutical currents or, as Josephus will later refer to them, “schools”. As prophetism waxed and waned, distinct trends or currents emerged in Jewish thought, a legalistic, a sacerdotal, and an eschatological-apocalyptic, becoming clearly identifiable around the third century B.C.E. (Boccaccini 1993, pp. 53–86). New conceptual antinomies began to emerge such as intelligence (*tebonah*) and wisdom (*hakmah*), soul (*nepesh*) and spirit (*roha*), God (*‘elohah*) and world (*tebel*), which contributed to the reformulation of ethical principles, enshrined in the debate regarding personal freedom and divine predestination.

The Jewish concerns were mirrored in the West by the Milesian and Eleatic philosophers who had begun their inquiry into the origins and foundations (*arche*) of reality. This process was accompanied by a critique of the Homeric gods and the rise of new political unity, the polis. It was in the city of Elea in Magna Graecia that Parmenides began undertaking his investigations into the reality of “being” by the only tool available, namely language. He argued that to name or think of an object entailed attributing existence to it and therefore it manifested the pure law of truth (*aletheia*), namely the “fullness of Being”. However, he also demonstrated that language concealed the root of error since every time one stated that the object “was” or “will be”, that is every time the temporal dimension was introduced, it inevitably led to the paradox of affirming the “non-being”. The Sophists tried to overcome the Parmenidean *aporia* by disengaging language from the question of truth and knowledge. This led to Gorgias stating (Sextus 2003, pp. 74–5):

The medium by which we communicate reality is the word, but the word does not coincide with the things which are endowed with a real existence: consequently what we can communicate is not the existing realities, but the word which is something different from reality.

It was the sophistic disengagement of the word from reality and truth that led to the emergence of ethical relativism and religious agnosticism. The separation of *nomen* and *res*, of name/word and thing/reality continued to be explored by Plato (1926a) in his dialogue *Cratylus*, which deals with the “correctness of words”. In the dialogue, Plato presents Socrates examining the validity of the two antithetical linguistic theories of naturalism and conventionalism, significantly concluding with the *ante diem* nominalist claim that reality should be directly studied in its own right and names should not be studied in pursuit of knowledge.

It is evident that the new teachings were grounded in the linguistic context, which was eminently religious, where new meanings forged and promoted a new ethos. It is in this particular conjuncture that the secular emerges as a particular discourse, one which stands in a paradigmatic and syntagmatic relation with religion in a restructured epistemological milieu. Language, in fact, appears central to the speculations of the axial philosophers. Their attention was on the

words and their relation to the objects they designated. It was in their hermeneutical activity of re-interpreting tradition, which made the experience of the divine temporal that the notion of the “secular” emerged. It was during the axial age that the divine became transcendental engendering a dichotomy between God and world. The transcendental divine coincided with the emergence of the conscious “self”, an autonomous individual being separate from, but in a relationship with, god and the world. As Charles Taylor (2007, p. 151) states “the surprising feature of the Axial religions...is that they initiate a break in all three dimensions of embeddedness: social order, cosmos, human good.”

In Greece, the linguistic revolution of the Axial Age was accompanied by a new understanding of bodily functions and how reality is perceived. Towards the end of the sixth century B.C., the Greek Pythagorean medical practitioner, Alcmaeon of Croton, stated that the organs of sense were connected with the brain which analyses, organises, and endows with cognitive meaning the data provided by the senses. According to Theophrastus, Alcmaeon had reached this conclusion by empirically observing that the senses appeared to be incapacitated if the brain was damaged or removed (Theophrastus 1965, pp. 497–527). The theory of Alcmaeon therefore established an unambiguous distinction between the external and internal realities, between the sentient subject and the external object, between what we may refer to in Cartesian terminology, the cogito and the res extensa. Alcmaeon’s discovery was revolutionary as it completely overturned the archaic cardio-centric understanding which placed the heart and the blood as the centre of human psychological processes. His “cerebro-centric” theory provided a new paradigm which endowed the brain with a central role in cognitive and psychological processes and thus contributed to place man at the epicentre of the world of experience. The spell of the unity of word and world had been broken forever and the dialogue, which imitates the inherent dichotomy between the self and the world, had replaced poetry.

Being and Becoming

The man described by Homer was capable of grasping the world of experience in its immanent totality as the self was not perceived as separate from it. The Homeric man, in fact, had no word corresponding to the modern “soul” and consequently his moral world was one disengaged from the consciousness of being-in-the world (Onians 1951). The dialogues between the gods, who governed the elements of nature and intervened in human affairs, and human beings, are symptomatic of the way the Homeric man perceived reality. The immanence of the divine in the world allowed man to explain and accept the vicissitude of life. The unexplainable was ascribed to the mysterious and impersonal force of Ananke (&νάγκη), Necessity or Fate, to which also the immortal gods were compelled to submit. It was this impersonal force which ascribed to man his lot (αἰσα or

μοιγα) (Greene 1944; Dietrich 1965): Zeus merely weighed the lot of man, he did not determine it (Homer 1999a, pp. 344–45). This dichotomy can be explained by the fact the mind of the Homeric man was essentially “naturalistic” as everything was perceived as being a part of nature in which space and time constituted an indissoluble continuum. The co-existence of two distinctive worldviews is evident in the Homeric poems where the Olympian gods stand alongside the nature deities (Homer 1999b, pp. 366–67), a condition which serves as evidence of the transition from a diffuse, spontaneous, and genuine spirituality to the condition of religion. The language of the former was thus poetic or mythical language, a language produced by those relations with the natural world which Plato in the *Phaedo* (Plato 2005, pp. 258–59) later used to describe the relations between the world of experience and the world of ideas, namely participation, imitation, communion, and presence. The Homeric poems, in fact, describe reality in a very structured and “normative” manner in accordance with the rule or sense of harmony, of eurhythmy, proportion, and measure, typical of narrative and Greek philosophy, and in which the rules of cause and effect, action and reaction explain human activity (Jaeger 1953, pp. 110–11). Greek philosophy will convert measure and limit into metaphysical principles (Reale 1984, p. 21).

As stated earlier, it was the fixation of the text which destroyed the free genesis and flow of myth and the creativity of intuitive thought. Homer is, in fact, already a man of logos. The ancient philosophers already understood that a rupture had occurred, an asymmetry had developed between the world of the imagination and that of reason as they understood logos and mythos, as an irreconcilable antithesis. Plato in the *Phaedro* (Plato 2005, pp. 560–77) stated that the true philosopher does not reveal “things of great value” (*ta timia tera*) through a written text, but only through “living discourse” as writing is play and artifice. Things of great value can be summarised in short sentences, as an aphorism in which what is stated is self-evident and common sense (Plato 1973, pp. 140–41) Aristotle’s claim (Aristotle 1933, pp. 12–13) that he who loves myth is somehow a philosopher appears to corroborate the evidence that among fourth century B.C.E. philosophers there was widespread belief in the validity of oral mythical tradition, and that the exclusive reliance on logos produced a set of aporias impossible to resolve. It was the act of writing that broke the spell of the unity of cogito and res extensa, and thus the gradual dominance of the left hemisphere.

Anaxagoras of Clazomenae (500–428 B.C.), in the wake of Alcmeon’s medical studies, argued that thought, nous, was the principle of movement and human activity. Such an acknowledgement was accompanied by his adoption of prose, rather than poetry, to express his views. Diogenes Laertius (Diogenes 1925, pp. 134–45) claims that Anaxagoras was the first to publish a book in prose, and to have claimed that the Homeric poems were about justice and virtue. The transition from poetry to prose is indicative of a change in attitude towards the world of experience and may have been prompted by the deep and rapid changes

affecting the structures of the world of experience since the eighth century B.C.E., and which led to the emergence of a new culture, mainly technical-scientific in character, reflecting the needs and aspirations of the demos. Prose is not “natural” and is not the product of natural language but of convention, since it follows precise rules or norms, namely those of grammar, and its aim is intelligibility. It was in this context that the idea of the irrational (*ate⁻*, *alogia*), intended as a dimension contrary to *logos* or of what defies the laws of *logos*, began to emerge as a reality which allowed the Greeks to define the purview of rational thought and to lay the foundations of ethics. Essential to this transition was the definition of the spiritual as “piety” (*sebas*), namely reverence for the gods of the polis, and the organisation of religious practice (Murray 1907, p. 265; Bowra 1977, p. 222). It is in the fold of this transition that the origin of fundamental moral dilemmas should be sought, such as the relation between natural law (*physis*) and positive law (*nomos*), and the limits of humanity. It appears evident that such dilemmas were produced by the dialectics between the two hemispheres of the brain which emerged once the original integrated asymmetry had collapsed.

Anaxagoras’ activity represents an advanced development of Greek culture born out of a reaction to the early sixth century attempts to protect the ascendancy and privileges of the Greek landed aristocracy by philosophers such as Pythagoras, Heraclitus, and Parmenides who had tried to renew and strengthen the sacerdotal tradition of the temple of Apollo of Delphi. These earlier philosophers expressed their philosophical theories about the origin of the universe in poems significantly entitled *Peri Physeo⁻s*, “On Nature”.

The arguments and speculations of the so-called Eleatic philosophers, Parmenides and Heraclitus, represent the stage of transition from a culture informed by *mythos* to one informed by *logos* and *theoria*. These thinkers are still anchored to a poetic mode of expression but are addressing the essential questions which will become the foundational structures of Western thought, namely Being and Time—ontology and history. The aporias produced by Parmenides and Heraclitus in their search for the origins of reality can well be imputed to the incipience of a fracture in the integrated asymmetry of the two hemispheres of the human brain.

Parmenides is that revolutionary thinker who transformed the cosmological inquiry of the Milesian philosophers into ontology, although the foundations of his thought remained more imaginative or intuitive rather than rational or logical. In his renowned poem, *On Nature*, he intuitively identifies the existence of two “ways” of inquiry into reality: the way of reason or discourse (*logos*), and that of appearance (*phainomenon*). The way of *logos* leads to truth (*aletheia*) and that of appearance leads to fallacious opinion (*doxa*). This bipartite division is essentially epistemological as it points towards how true knowledge of reality can be acquired. The fundamental principle of his ontology is that being exists and cannot be simultaneously non-being, and that the latter cannot be in any way

being (Diels and Kranz 1952, 28 B2 and 28 B6). The tautological statement indicates that only the objects that can be thought and expressed exist. In a statement which may be considered a forerunner to the one formulated later by Descartes, Parmenides claims that thought and being constitute an indissoluble identity (Hintikka 1980, pp. 5–16). Thus, the principle of non-contradiction and the identity of thought and being became the cornerstone of Western logic and may have contributed to set the Western world on the path of a distinctive rationalism.

It is well known that Parmenides' ontology produced a fundamental aporia, namely the inability to account for change, which his disciples, Zeno and Melissus, tried to overcome. Being was conceived by Parmenides (Diels and Kranz 1952, 28 B8, pp. 26–33) as absolutely immobile, unchangeable, indivisible, and eternal by Necessity (ananke). It was the attempt to overcome the Parmenidean aporia that further entrenched the logic principles of non-contradiction, identity, and the exclusion of the third in Western thought, thus gradually marginalising the sphere and use of imagination. It must be noted that the statements of rationalism and their inherent aporias gave rise to scepticism, intended as continuous research and consequent suspension of judgement, and to relativism, as suggested by the theoretic activity of Xenophanes of Colophon (Mogyoródi 2006, pp. 123–60).

Parmenides' contemporary, Heraclitus of Ephesus, in confuting the cosmology of the Milesians observed that their fundamental axiom concerning the existence of a universal dynamism characterising reality was fundamentally well-founded. Reality was not immobile but in constant flux in accordance with a perennial cycle of generation and destruction. The well-known image or simile of the flowing river which remained always the same notwithstanding its waters were always new visualises Heraclitus' understanding of reality. Thus, becoming was the essence of reality for Heraclitus, a becoming which manifests itself as a perpetual alternation of conflict and synthesis between opposites (Diels and Kranz 1952, 22 B126, p. 8). This perennial becoming, configured as the eternal return of the same, is governed by the principle of logos, intended variously as intelligence, reason, rule, and discourse (Hülsz 2013, pp. 281–301). This logos can be grasped only by moving beyond the fallacious illusions or opinions produced by appearance (phainomenon).

The language adopted by Heraclitus to articulate his thought is ambiguous or oracular as it simultaneously conceals and reveals. Parmenides too had used a poetic-religious language to express the contents of his thought, which he presented as having been revealed by the "goddess" (Diels and Kranz 1952, 28 B1, pp. 28–32). The evident orphic influences on Heraclitus' thought (Jaeger 1953, pp. 28–29) have never been fully explored just as the influence of the Delphic sacerdotal tradition on the thought of Parmenides have either been neglected or downplayed (Vegetti 1978, pp. 28–29). It remains that the intuitions

of these two philosophers became through the works of Plato and Aristotle the foundation of Western thought. Their attempt to grasp the fundamentals of reality prompted them to move in the direction of logic and mathematical demonstration (Long 2013, pp. 201–23) and away from the realm of intuition and imagination bringing about a quantum shift in the way the world and its relations with the divine and with man were articulated and understood. This process was accompanied by the gradual disengagement from a traditional immanent and mystic spirituality towards a discourse centred on a transcendental understanding of the divinity, often configured as the mirror image of man projected onto a metaphysical level, beyond the world. Their discussions concerning the origins and principles of reality contributed to the development of religion, at the expense of an intuited and mystic spirituality, and the development of the domain of the secular.

CONCLUSIONS

It can be argued that the practical advantages derived from the development of critical thought and ethics, during the so-called Axial Age, prompted the gradual marginalisation or subordination of the imagination and, to a certain extent, of the aesthetic dimension. On a neuro-physiological level, this shift was marked by the ascendancy of the left hemisphere of the brain and the breakdown of the assumed original asymmetry of the two hemispheres of the cerebrum. It has been demonstrated that Eleatic philosophy represents the culmination of a process, which had already become noticeable in the works of Homer and their fixation in the written text. There appears to be an undeniable correlation between the appearance and adoption of writing and the rise of analytical thought and self-consciousness. Although the terms of the relation between language and thought are difficult to establish, it appears possible to state that both consciousness and verbalisation are fundamental aspects of thought, a fact which induces to cautiously conclude that language structure may produce a semantic universe which informs the way the conscious “self” posits itself in relation to the external reality.

McGilchrist’s hypothesis therefore is valid insofar that it places the breakdown of the original integrated asymmetry of the bi-cameral brain as the source of reflective and analytical thought and of the concomitant discovery of the self. The limits of his theory reside in the fact that he confines these changes to the West, ignoring that similar changes were simultaneously occurring in other parts of the world, although with different outcomes, as the widespread discovery of the power of logos, namely the language of reason, suggests. These different outcomes largely depended on particular historical circumstances, ecological conditions, and cultural configurations. As a result, rationalism is not the

exclusive prerogative of the West: Western rationalism is just one of the many “rationalisms” which developed during the Axial Age.

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REFERENCES

- Aristotle. 1933. *Metaphysics*, Volume I: Books 1–9. Translated by Hugh Tredennick. Loeb Classical Library 271. Cambridge: Harvard University Press.
- Aristotle. 1938. *On Interpretation. Prior Analytics*. Translated by Hugh P. Cooke, and Hugh Tredennick. Loeb Classical Library 325. Cambridge: Harvard University Press.
- Armstrong, Karen. 2006. *The Great Transformation. The World in the Time of Buddha, Socrates, Confucius and Jeremiah*. London: Atlantic Books.
- Armstrong, Karen. 2007. *On the Bible*. London: Allen & Unwin.
- Assmann, Jan. 2012. Cultural Memory and the Myth of the Axial Age. In *The Axial Age and Its Consequences*. Edited by Robert N. Bellah and Hans Joas. Cambridge: The Belknap Press of Harvard University Press, pp. 366–407.
- Assmann, Jan. 2015. Tradition, Writing and Canonisation. Structural Changes of Cultural Memory. In *The Formative Past and the Formation of the Future*. Edited by Terje Stordaten and Saphinaz-Amal Naguib. Oslo: Novus Press, pp. 115–32.
- Basalla, George. 1988. *The Evolution of Technology*. Cambridge: Cambridge University Press.
- Beckwith, Christopher I. 2015. *Greek Buddha: Pyrrho’s Encounter with Early Buddhism in Central Asia*. Princeton: Princeton University Press.
- Bellah, Robert N. 2011. *Religion in Human Evolution. From the Paleolithic to the Axial Age*. Cambridge: The Belknap Press of Harvard University Press.
- Berent, Moshe. 1998. Stasis, or the Greek Invention of Politics. *History of Political Thought XIX*: 331–62.
- Bergson, Henri. 1927. *Essai sur les Données Immédiates de la Conscience*. Paris: Presses Universitaires de France.
- Boccaccini, Gabriele. 1993. *Il Medio Giudaismo*. Genova: Marietti.
- Bowra, Cecil Maurice. 1977. *Tradition and Design in the Iliad*. Westport: Praeger.
- Boyce, Mary. 1979. *Zoroastrians: Their Religious Beliefs and Practices*. London: Routledge & Kegan Paul.
- Boyce, Mary, ed. 1984. *Avesta: Vendidad, 18.27*. In *Textual Sources for the Study of Zoroastrianism*. Manchester: Manchester University Press.
- Brague, Rémi. 2002. *Eccentric Culture: A Theory of Western Civilization*. Translated by Samuel Lester. South Bend: St Augustine’s Press.
- Burkert, Walter. 1985. *Greek Religion*. Cambridge: Harvard University Press.
- Carroll, John B., ed. 1956. *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf*. Cambridge: MIT Press.
- Cohen, Boaz. 1959. *Law and Tradition in Judaism*. New York: Jewish Theological Seminary of America.
- Cole, Michael, and Sylvia Scribner, eds. 1974. *Culture and Thought: A Psychological Introduction*. New York and London: Wiley & Co.
- Confucius. 1996. *The Analects*. Translated by Arthur Waley. Ware: Wordsworth Editions.
- Creel, Herrlee Glessner. 1960. *Confucius and the Chinese Way*. London and New York: Harper Torchbooks.
- Develin, Robert. 2003. *Athenian Officials, 684–321 BC*. Cambridge: Cambridge University Press.

- Diels, Hermann, and Walther Kranz. 1952. *Die Fragmente der Vorsokratiker, I*. Hildesheim: Weidmann.
- Dietrich, Bernard C. 1965. *Death, Fate and the Gods. Development of a Religious Idea in Greek Popular Belief and in Homer*. London: The Athlone Press.
- Diogenes, Laertius. 1925. *Lives of Eminent Philosophers, Volume I: Books 1–5*. Translated by Robert Drew Hicks. Loeb Classical Library 184. Cambridge: Harvard University Press.
- Dodds, Eric Robertson. 1951. *The Greeks and the Irrational*. Berkeley: University of California Press.
- Donald, Merlin. 2012. *An Evolutionary Approach to Culture: Implications for the Study of the Axial Age*. In *The Axial Age and Its Consequences*. Edited by Robert N. Bellah and Hans Joas. Cambridge: The Belknap Press of Harvard University.
- Feeney, Denis. 2008. *Caesar's Calendar: Ancient Time and the Beginning of History*. Berkeley: University of California Press, pp. 167–93.
- Foster, George M. 1962. *Traditional Cultures, and the Impact of Technological Change*. New York: Harper.
- Gadamer, Hans-Georg. 2004. *Truth and Method*. Continuum. London: Continuum.
- Gellner, Ernest. 1959. *Words and Things: A Critical Account of Linguistic Philosophy and a Study of Ideology*. London: Gollancz.
- Gnoli, Gherardo. 1980. *Zarathustra's Time and Homeland: A Study on the Origins of Mazdeism and Related Problems*. Napoli: Istituto Universitario Orientale.
- Goody, Jack. 1986. *The Logic of Writing and the Organization of Society*. Cambridge: Cambridge University Press.
- Goody, Jack. 1987. *The Interface between the Written and the Oral*. Cambridge: Cambridge University Press.
- Grafton, Anthony, Glenn W. Most, and Salvatore Settis. 2010. *The Classical Tradition*. Cambridge: Harvard University Press.
- Graham, William A. 1987. *Beyond the Written Word: Oral Aspects of Scripture in the History of Religion*. Cambridge: Cambridge University Press.
- Greene, William Chase. 1944. *Moirai. Fate, Good and Evil in Greek Thought*. Cambridge: Harvard University Press.
- Greene, Michael. 2002. *A Shared World: Christians and Muslims in the Early Mediterranean*. Princeton: Princeton University Press.
- Greimas, Algirdas Julien. 1987. *On Meaning: Selected Writings in Semiotic Theory*. Translated by and Edited by Paul Perron and Frank Collins. Minneapolis: University of Minnesota Press.
- Hall, H. 1998. *Literature and Performance*. In *The Cambridge Illustrated History of Ancient Greece*. Edited by Paul Cartledge. Cambridge: Cambridge University Press.
- Hall, David L., and Roger T. Ames. 1987. *Thinking Through Confucius*. Albany: State University of New York Press.
- Halporn, James W., and Martin Ostwald. 1980. *The Meters of Greek and Latin Poetry*. Indianapolis: Hacking Publishing Co.
- Halton, Eugene. 2014. *From Axial Age to Moral Revolution: John Stuart-Glennie, Karl Jaspers, and a New Understanding of the Idea*. London: Palgrave.
- Havelock, Eric Alfred. 1976. *The Muse Learns to Write: Reflections on Orality and Literacy from Antiquity to the Present*. New Haven: Yale University Press.
- Heidegger, Martin. 2001. *Being and Time*. Translated by John Macquarrie, and Edward Robinson. Oxford: Oxford Blackwell. First published 1962.
- Hintikka, Jaakko. 1980. 'Parmenides' Cogito Argument'. *Ancient Philosophy* 1: 5–16. [CrossRef]
- Homer. 1999a. *Iliad. 1–12*. Translated by A. T. Murray. Revised by William F. Wyatt. Loeb Classical Library 170. Cambridge: Harvard University Press.
- Homer. 1999b. *Iliad. 13–24*. Translated by A. T. Murray. Revised by William F. Wyatt. Loeb Classical Library 170. Cambridge: Harvard University Press.
- Hülsz, Piccone E. 2013. *Heraclitus on Logos: Language, Rationality and the Real*. In *Doctrine and Doxography: Studies on Heraclitus and Pythagoras*. Edited by D. Sider and D. Obbink. Berlin: De Gruyter.

- Humboldt, Wilhelm F. 1999. *On Language: On the Diversity of Human Language and its Influence on the Mental Development of the Human Species*. Edited by M. Losonsky. Translated by P. Heath. Cambridge: Cambridge University Press.
- Jackendoff, Ray. 1996. How language helps us think. *Pragmatics and Cognition* 4: 1–24. [CrossRef]
- Jaeger, Werner. 1953. *Paideia: The Ideals of Greek Culture*. Oxford: Oxford University Press, vol. I.
- Jaspers, Karl. 2010. *The Origin and Goal of History*. Translated by Michael Bullock. London and New York: Routledge. First published 1953.
- Jeremiah. 1994. *The New Jerusalem Bible*. 8: 8–9. Study Edition. London: Darton, Longman & Todd.
- Kautilya. 2000. *Arthashastra*. Translated by L. N. Rangarajan. New Delhi: Penguin.
- Keay, John. 2000. *A History of India*. London: HarperCollins.
- King, Richard. 1999. *Indian Philosophy: An Introduction to Hindu and Buddhist Thought*. Edinburgh: Edinburgh University Press.
- Lee, Richard B. 2018. Hunter-Gatherers and Human Evolution: New Light on Old Debates. *Annual Review of Anthropology* 47: 513–31. [CrossRef]
- Lesky, A. 1982. *Storia Della Letteratura Greca*. Milano: Il Saggiatore, vol. I.
- Levy-Bruhl, Lucien. 1983. *Primitive Mythology. The Mythic World of the Australian and Papuan Natives*. St Lucia: University of Queensland Press. First published 1922.
- Liebenburg, Louis. 2012. *The Art of Tracking, the Origin of Science*. Cape Town: David Philip Publishers.
- Long, Anthony A. 2013. Heraclitus on Measure and the Explicit Emergence of Rationality. In *Sider & Obbink, Doctrine and Doxography*. Berlin: De Gruyter, pp. 201–23.
- Luria, Aleksandr Romanovich. 1976. *Cognitive Development: Its Cultural and Social Foundations*. Translated by M. Lopez-Morillas, and L. Solotaroff. Cambridge: Harvard University Press.
- Martinet, André. 1955. *Economie des Changements Phonétiques*. Berne: Francke.
- McGilchrist, Iain. 2012. *The Master and His Emissary. The Divided Brain and the Making of the Western World*. New Haven: Yale University Press.
- Mogyoródi, Emese. 2006. Xenophanes' epistemology and Parmenides' quest for knowledge. In *La costruzione del Discorso Filosofico Nell'età dei Presocratici*. Edited by Maria Michela Sassi. Pisa: Ed. della Normale, pp. 123–60.
- Mueller, Max. 1899. *Six Systems of Indian Philosophy*. Calcutta: Susil Gupta.
- Murray, Gilbert. 1907. *The Rise of the Greek Epic*. Oxford: Clarendon Press.
- Naveh, Joseph. 1997. *Early History of the Alphabet*. Jerusalem: The Hebrew University Magnes Press.
- Nietzsche, Friedrich. 1983. On the uses and disadvantages of history for life. In *His Untimely Meditations*. Translated by Jan R. Hollingdale. Cambridge: Cambridge University Press.
- Nissen, Hans J. 1990. *The Early History of the Ancient Near East, 9000–2000 B.C.* Chicago: University of Chicago Press.
- Ong, Walter J. 1982. *Orality and Literacy: The Technologizing of the Word*. London: Methuen.
- Onians, Richard Broxton. 1951. *The Origins of European Thought*. Cambridge: Cambridge University Press.
- Osborne, Robin. 1996. *Greece in the Making 1200–479 B.C.* London and New York: Routledge.
- Parry, Milman. 1971. *The Making of the Homeric Verse: The Collected Papers of Milman Parry*. Oxford: Clarendon Press.
- Plato. 1921. *Theaetetus. Sophist*. Translated by Harold North Fowler. Loeb Classical Library 123. Cambridge: Harvard University Press.
- Plato. 1926a. *Cratylus. Parmenides. Greater Hippias. Lesser Hippias*. Translated by Harold North Fowler. Loeb Classical Library 167. Cambridge: Harvard University Press.

- Plato. 1926b. *Laws, Volume II: Books 7–12*. Translated by Robert Gregg Bury. Loeb Classical Library 192. Cambridge: Harvard University Press.
- Plato. 1929. *Timaeus. Critias. Cleitophon. Menexenus. Epistles*. Translated by Robert Gregg Bury. Loeb Classical Library 234. Cambridge: Harvard University Press.
- Plato. 1973. *Phaedrus and the Seventh and Eighth Letters*. Translated by Walter Hamilton. London: Penguin Books.
- Plato. 2005. *Euthyphro. Apology. Crito. Phaedo. Phaedrus*. Edited and Translated by Harold North Fowler. Loeb Classical Library 36. Cambridge: Harvard University Press.
- Plato. 2013. *Republic, Volume I: Books 1–5*. Edited and Translated by Christopher Emlyn-Jones and William Preddy. Loeb Classical Library 237. Cambridge: Harvard University Press.
- Prakken, D. 1943. *Greek Genealogical Chronologies*. Lancaster: Lancaster Press.
- Reale, Giovanni. 1984. *Storia Della Filosofia Antica. Dalle Origini a Socrate. Vita e Pensiero*. Milano: Pubblicazioni della Universita' Cattolica, Vol. I.
- Ricoeur, Paul G. 2003. *The Rule of Metaphor*. London and New York: Routledge Classics. First published 1977.
- Robinson, Francis. 1993. *Technology and Religious Change: Islam and the Impact of Print*. *Modern Asian Studies* 27: 229–51. [CrossRef]
- Robinson, Chase F. 2002. *Islamic Historiography*. Cambridge: Cambridge University Press.
- Sahlins, Marshall. 1981. *Historical Metaphors and Mythical Realities; Structure in the Early History of the Sandwich Island Kingdom*. Ann Arbor: University of Michigan Press.
- Sapir, Edward. 1924. *The Grammarian and His Language*. *American Mercury* I: 149–55.
- Sextus, Empiricus. 2003. *Against the Mathematicians, VII*. In *The Greek Sophists*. Translated and with an Introduction and Notes by John Dillon and Tania Gergel. London: Penguin.
- Snell, Bruno. 1982. *The Discovery of the Mind in Greek Philosophy and Literature*. New York: Dover Publications. First published 1953.
- Stcherbatsky, Theodor. 1970. *The Central Conception of Buddhism and the Meaning of the Word Dharma*. Delhi: Indological Book House.
- Taylor, Charles. 2007. *A Secular Age*. Cambridge: The Belknap Press of the University of Harvard Press.
- Thapar, Romila. 2012. *Asoka and the Decline of the Mauryas*. Oxford: Oxford University Press. First published 1961.
- Theophrastus. 1965. *On the Senses, 26*. H. Diels, *Theophrasti Fragmentum De sensibus*. In *Doxographi Graeci*. Berlin: De Gruyt.
- Thomas, Rosalind. 1989. *Oral Tradition and Written Record in Classical Athens*. Cambridge: Cambridge University Press.
- Vegetti, Mario. 1978. *Filososofia e Sapere della Cita' Antica*. In *Filosofie e Societa'*. Edited by M. Vegetti and F. Alessio. Bologna: Zanichelli.
- Whitfield, Susan. 2019. *The Silk Roads*. Berkeley: University of California Press.
- Zimmer, Heinrich. 1951. *Philosophies of India*. New York: Princeton University Press.