# Cognitive Style of Culture and the Problem of Cultural-Historical Cognitive Development

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## Introduction

In the last two decades, we can note the sharp growth of interest in types of cognition, ways of thinking, and modes of being opposite to those of the modern American culture. Interestingly, the researches in this field usually make little difference between Americans and Europeans relating them both to the Western cultural model (see, e.g., Varnum et al. 2008; Kitayama et al. 2009 for an exception). This cultural model is opposed to the Eastern one, represented by modern Japan, South Korea, and China. The general opposition *the West – the East* is specified in a number of particular dichotomies such as *analytic* vs. *holistic cognition* (Nisbett et al. 2001; Nisbett 2003), *rule-based* vs. *experience-based thinking* (Norenzayan 1999), *formal* vs. *intuitive reasoning* (Norenzayan et al. 2002), *independent* vs. *interdependent self* (Markus and Kitayama 1991, 2003; Kitayama et al. 2007, 2009), and, to some extent, *field-dependent – field-independent cognitive style*. The last dichotomy emerged earlier in different context[1]; however, it has been widely employed in this area (Markus and Kitayama 1991: 247; Nisbett et al. 2001: 293).

A huge amount of evidence gathered to reveal the visible difference in perception, cognitive skills, dominant social attitudes, etc. between the Western and Eastern cultures looks pretty impressive; however, it needs more elaborate interpretation. Especially, the historical underpinnings of this system of opposition are far from clarity. Thus, Richard Nisbett and colleagues find the origins of analytic type of cognition in ancient Greece. Importantly, they define ancient Greek and modern Western societies as individualistic ones whereas ancient Chinese and modern East Asian communities for them are collectivist in orientation.[2] If this logic is correct, the ancient Greek way of thinking might be defined

as more analytic (less field-dependent) than, say, the modern Japanese one. The point is possible, but hardly obvious. It may, therefore, be interesting to discuss the reasons for that. Unfortunately, Nisbett's argument rests on the statements of the political system, scientific achievements, etc. in ancient Greece being too general to hold water. It is not accidental because here we encounter an awkward problem. As is well known, researchers of ancient and medieval cultures cannot carry out real experiments or observations. Putting aside archeological data, the only way to extract any information about cognitive operations basic for these cultures is a complex analysis of texts. The distinguished German historian Reinhart Koselleck emphasized "… a methodologically irresoluble dilemma: that every history, while in process and as occurrence, is something other than what its linguistic articulation can establish; but that this 'other' in turn can only be made visible through the medium of language" (2004: 223; cf. Pocock 2009: 106–119). This position may also be applied to cognition. The way people think is different from its verbal representation; however, we cannot comprehend the way which people of the 19th century or earlier exploited for reasoning and perceiving the world unless we scrupulously analyze the texts they created. Although such view on text as a medium for revealing cognitive models is not widespread among cognitive psychologists, there are a number of recently emerged branches of cognitive science (cognitive stylistics, cognitive poetics, etc.), where scholars apply a cognitive analysis to particular texts, mostly fiction.[3] Nevertheless, we can hardly find any works which generalize cognitive models common for different types of texts created in some historical epoch. This article provides such generalization for Ancient Greek culture as a first step in that direction.

Before dealing with the problem at hand, an issue situated nearby, i.e., the problem of cultural-historical cognitive development, should be addressed. The investigations of Vygotsky's cultural-historical school (as it is usually called in the Russian tradition) can be a point of reference for that. In the first place, the distinction between complex and conceptual thinking (Vygotsky 1986 [1934]: 96–145) and the idea of field binding (Samukhin et al. 1934; Vygotsky 1984 [1933/34]) should be addressed in this context. Briefly, the essence of this approach can be formulated as follows: unlike concepts, which are characterized by a rigid structure and a set of objective features, complexes have flexible and contextu-

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1 Witkin et al. (1962, 1977); Witkin (1967); Witkin and Berry (1975); Berry (1976).

2 "There is substantial evidence that the social psychological differences characteristic of ancient China and Greece do in fact persist. China and other East Asian societies remain collectivist and oriented toward the group, whereas America and other European-influenced societies are more individualist in orientation" (Nisbett et al. 2001: 295).

3 Attardo (2002); Culpeper (2002); Semino (2002, 2007); Tsur (2002); Emmott et al. (2007).

ally dependent frames. In the case of complex thinking, subjects' cognitive decisions are influenced by their unique experience and, therefore, cannot be described by Aristotelian logic and similar theoretical frameworks. Vygotsky created this model mainly to explain preschool and primary school children's cognitive development and only outlined its application to culture. However, his followers applied this approach to different types of cultures and got the important results. Thus, Aleksandr Luria (1976), when researching cognitive scenarios basic for Central Asian dekchans, pointed out that those scenarios were triggered by psychological fields of their everyday activity. Particularly, the subjects under research could not perceive the abstract classification principles used for a given set of objects and failed to identify the odd one out; they presumed that all the given objects were useful for everyday life. By the same token, they could not solve syllogisms, conceiving their elements as independent propositions. Importantly, their answers were based on their everyday experience, and they insisted that they could speak only about the things they had seen before. Further investigations (e.g., Micheev 1985; Tulviste 1991) confirmed that complex thinking or, in other words, the rigid links with the psychological field of everyday experience appears to be the gist of the traditional cultures' intelligence.

There are two remarks that should be made here. Firstly, in that scope there is no notable cognitive difference between theoretical cultures, in particular, between ancient Greek and modern Western ones. So, in this aspect the cultural-historical school's view coincides with that of Nisbett and colleagues. As it was mentioned above, this point is up in the air. Secondly, the idea of field binding, developed by Vygotsky, is similar, to a considerable extent, to Witkin's dichotomy *field-dependent – field-independent cognitive style*. It may, therefore, be appropriate to extend this dichotomy to ancient theoretical cultures, in order to bring out the cognitive differences and reveal possible cognitive development within the theoretical mode of thinking. However, the problem is how to measure these differences. Unfortunately, we have no time machine; hence, Witkin's RFT and BAT tests as well as the FLT test by Kitayama et al. (2003) can hardly be useful for us in this case. Once again, the only way to provide this approach is the narrative analysis of the texts.

This article focuses on a number of case studies, but its bottom line is to discover some correlation between the narrative models of the text construction and the cognitive models used by the author. As we rest on the concept *cognitive style* in that, it may

be useful to refresh its back story. This concept has been widely used in different types of researches;[4] although it cannot be called fairly clear-cut (see some criticism in Tomes 2004: 47 f.), its gist is quite transparent:

a) *cognitive styles* characterize the form rather than the content of cognitive activity;
b) they are pervasive dimensions which cross-cut disciplinary boundaries;
c) they are stable over time;
d) they are bipolar, that is, they can be sorted into the opposite pairs (field-dependency – independency; holist – serialist thinking; adaptors – innovators, etc.)

(Witkin et al. 1977: 15 f.; Riding and Rayner 1998: 20).

I use this category here with two peculiarities: firstly, I apply the concept of cognitive style to a particular culture but not to a particular person; in other words, I address the mode of thinking common to a notable number of culture bearers, involved in different types of intellectual activity; secondly, I seek for some criteria to compare these modes to reveal possible cognitive development within Western culture from the antiquity to nowadays.

As mentioned, the only parameter we will focus on is *field-dependency – independency*. Following Herman Witkin, the field-independent cognitive style characterizes the tendency to distinguish objects from their surroundings, whereas the field-dependent one stresses the strict connection between surroundings and objects. It concerns the subjects as well; people of the field-dependent style are more likely to follow the external instructions while people of field-independent style prefer to rest their actions on their own internal basis (Witkin et al. 1977: 2–14).

In this scope complex thinking corresponds to the strongly field-dependent cognitive style (the decision is deeply influenced by the situational context), while conceptual thinking can be characterized as field-independent (the decision is determined by general rules which have no connection with the particular situation).

Given these standpoints as background for further discussion, it may, therefore, be interesting to discuss in which cultures conceptual thinking emerges. At first sight, it appears alongside the de-

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4 Rubin (1970); Berzonsky and Ondrako (1974); Witkin et al. (1977); Logan (1983); Roberge and Flexer (1983); Fuchs (1991); McIntyre and Meloche (1995); Judice (1997); Riding and Rayner (1998, 2000); Tomes (2004); cf. concept of *mind style* in Semino (2002, 2007).

velopment of written language and complex forms of social-economic activity in such large-scale civilizations as ancient Babylon or ancient Egypt. However, there are a number of weighty objections to this point. To illustrate them it is worth examining the Code of Hammurabi, the Babylonian law code, dating to around the 18th century B.C. It is its structure, that is interesting to address. When reading the law code, we would expect to find a rigid frame and general principles of the text composition, unified models of coherent transition from one paragraph to another. But the Code of Hammurabi is structured in a radically different way. Let us have a look at a number of successive paragraphs of the code.

§ 108: If a tavern-keeper (feminine) does not accept corn according to gross weight in payment of drink, but takes money, and the price of the drink is less than that of the corn, she shall be convicted and thrown into the water.

§ 109: If conspirators meet in the house of a tavern-keeper, and these conspirators are not captured and delivered to the court, the tavern-keeper shall be put to death.

§ 110: If a "sister of a god" [nun] opens a tavern, or enters a tavern to drink, then shall this woman be burned to death.

§ 111: If an inn-keeper furnish sixty ka of usakani-drink to … she shall receive fifty ka of corn at the harvest.

We can see that the principles of such transition are rather strange for this type of text, and more similar to complex rather than to structure built under abstract rules. Actually, § 108 and § 109 are connected to a tavern-keeper, committing radically different crimes, § 109 and § 110 – by a tavern, and in § 111 a tavern-keeper[5] appears again, but now she is spoken about not as a criminal but as a usual trader.

Again, this is not the result we might have expected. We know ancient Babylon as a large-scale civilization with rather complicated forms of political and social life, with their own literature and art, and, to some extent, science; if so, we might expect the similarity in modes of thinking, basic in that time and, accordingly, dominant nowadays, at least, in the same type of texts. Nevertheless, it is the opposite, that is true. The more precise analysis of Babylonian texts shows that "literature," "art," and "science" differ radically from the modern ones in a number of substantial elements. For instance, Babylonian "science" is closely related to a set of some particular practical situations (cultivation, etc.), while it does not suggest any generalization (e.g., Diakonov 1982). And that is exactly what

we could see above in the structure of the Code of Hammurabi.

So, we should admit that the people of ancient Babylon, at least in some cases, used to apply cognitive strategies totally different from the modern ways of thinking and described by the concept of complex thinking. Certainly, it does not mean that their cognitive models are close to that of children and sympractical cultures; but it means that we should seek for a more complicated model to describe basic cognitive operations for ancient civilizations, and, again the only way to do it is the analysis of various types of texts. All in all, to find theoretical cognitive operations in such cultures as ancient Egypt or ancient Babylon would be an abuse of facts; in that we can identify them as pre-theoretical cultures which are characterized by strong dependence on the psychological fields of everyday activity.

What cannot be cast in doubt, though, is the fact that theoretical cognitive operations and, hence, conceptual thinking are an important element of the ancient Greek intelligence. However, it is the beginning, but not the end of the investigation. The question is, whether the cognitive style dominant in this culture is similar to the modern one or does it have some notable peculiarities? And, if the latter hypothesis is correct, can we track the trajectory of cognitive evolution within the theoretical mode of thinking? In order to answer this question, we should, first, bring out the basic features of the ancient Greek cognitive style and, second, compare them with that of modernity. As the cognitive style characterizes mainly the form of the cognitive activity applied to different content, the right way to implement the first task is to parallel cognitive skills in distinctly different fields of intellectual activity and to reveal similar models. To come to grips with that, I will examine the ancient Greek mathematics and historiography by considering the three eminent works, namely: Euclid's "Elements" (Heath 1956) and the historical treatises by Herodotus and Thucydides.

**The Cognitive Style
of the Ancient Greek Mathematics
(by the Example of Euclid's "Elements")**

It is not a novel insight that modern mathematics (at least, mathematics at school) rests on Euclid's "Elements," the first textbook of geometry, including the major results of the ancient Greek mathematics.[6] If so, we might expect to see in this work familiar con-

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5 Inn-keeper and tavern-keeper mean the same person. In the Acadian original one word, i.e., *sābītum*, is used for both characters.

6 Van der Waerden (1954: 121–224); Piaget and Garcia (1976: 31); Heath (1981: 354–446); Kline (1990: 56–89).

ceptual ideas and basic attitudes. There is a wide body of opinion, that mathematics is not grounded on sociocultural environment. Nevertheless, there are a number of philosophers and historians of science stating the opposite view. Thus, the eminent German historian and philosopher Oswald Spengler in his book "The Decline of the West" (Der Untergang des Abendlandes) claimed that every culture had its own mathematics, and the difference between the ancient Greek mathematical style and that of modernity was crucial (Spengler 1991 [1918]: 41–69). In order to seek for the concrete arguments in this regard, let us have a more precise look at the text of "Elements."

We start up with the definitions of the first book. Here we encounter some surprises. For example, the definition of a triangle goes like this: "Of trilateral figures, an equilateral triangle is that which has its three sides equal, an isosceles triangle that which has two of its sides alone equal, and a scalene triangle that which has its three sides unequal" (Heath 1956/I: 2). From the modern perspective an equilateral triangle is a particular case of a triangle, and it sounds strange to mark out a scalene triangle as a special type of triangle. However, for the ancient Greeks the more perfect cannot be a particular case of the less perfect, and it is an equilateral triangle which is a triangle par excellence.

The next illustration of this principle is the difference between the concepts of number and magnitude. Here I should remind you that from the ancient Greek perspective the word ἀριθμός (number) meant only natural numbers; rational numbers were perceived as the ratio of two natural numbers. Unlike magnitude (μέγεθος), each number had its visual image (εἶδος): single numbers were represented by segments, compound numbers – by rectangles, squares, etc. The definitions related to magnitude are placed in the fifth book of "Elements," whereas those related to number lie in the seventh one (Heath 1956/II: 113 f., 277 f.). Some of them are identical, and we perceive number as a special case of magnitude (i.e., natural numbers as a special case of real numbers). However, it is not so for the ancient Greeks. Number is more perfect than magnitude like an equilateral triangle is better than a scalene one. Hence, the former cannot be only a particular case of the latter. It is noteworthy here, that the idea of the perfect form based on a visual perception, is extremely important for the ancient Greek philosophy and culture in general. The more perfect the entity is, the more perfect form it has. Thus, Parmenides' Being (τὸ ὄν) and Plato's Universe (κόσμος) have the most perfect form, that is, the form of a sphere (Parmen. Fr. 7; Pl. Tym. 33b–34a).

The visual ground for cognition can also be illustrated by the "geometric algebra" of the second book. Here, the elementary algebraic formulas, such as $(a+b)^2 = a^2 + 2ab + b^2$, are proved by employing the language of geometry (see Fig. 1). This proof looks rather cumbersome (it occupies two pages, whereas algebraic proof fits into one line), but here we encounter the fundamental limitations of the ancient Greek mathematics. Such "geometrization" of mathematics, its dependence on the visual field determined its frontiers[7]; the solution of some third and fourth degree equations was the maximum to reach in that scope. The only way to take a further step in this field was to develop the abstract notation system of algebra, which meant breaking the links between numbers and their visual ground. Such break demanded radical cultural transformations provided by medieval culture.

It may, therefore, be interesting to sketch the bottom line of this process. From the ancient Greek perspective, both the universe and particular natural things were self-sufficient entities, and their self-sufficiency was perceived as perfection (see, e.g., Arist. Phys II 192 b8–30). It means that they contained in themselves a principle of their motion and transformation. In the medieval Christian culture, however, such a principle turns out to be situated outside the universe. The universe and particular things turn into signs of the transcendental reality, the means to understand the scheme of God. The functional paradigm stands for the eidetic one. What it means for mathematics can be clearly seen if we compare Plotinus' and Augustine's view of number (the former is the author of "Enneads" considered as the outcome of the ancient Greek philosophical attitudes, the latter is the key person of the early medieval philosophy). For Plotinus, numbers are placed between ἕν (the One) and νοῦς (the Divine Mind), having the higher rank than the other εἴδοτα (ideas) (Enn. 6, 6, 8–14), whereas for Augustine, numbers are transformed into tools in God's hands, losing through that transformation their unique forms. Thus, he introduces numbers, perceived by senses (*numeri sensibilis*), numbers moving over time (*temporales numeri*), etc. (Epistola III, 2; De musica, VI, 57).

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7 The "visual vector" of the ancient Greek mathematics can also be revealed in terminology. Thus, according to Liddell and Scott's Greek-English Lexicon, the basic meaning of θεωρέω (theorize) is "to look at, view, behold," e.g., "to view the public games"; θεωρία (theory) basically means "sending the state-ambassadors to the oracles or games or being a spectator at the theatre or games," θεώρημα (theorem) – "sight, spectacle, object of contemplation." Thanks to Aristotle, these concepts were shifted from the material world to the ideal one to characterize the process, product, and object of intellectual contemplation.
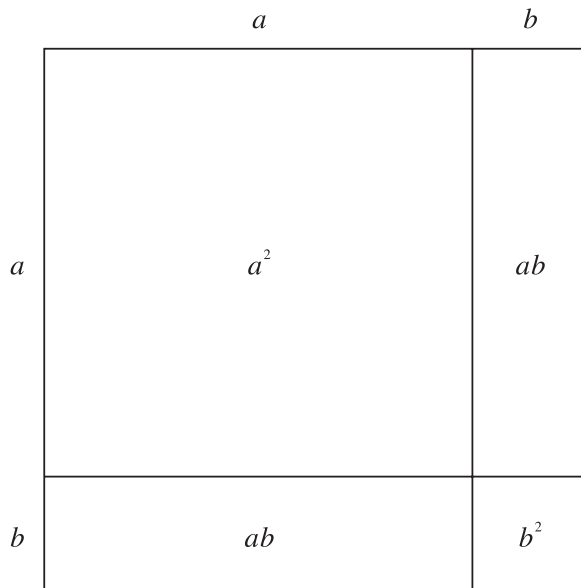
**Fig. 1.:** A geometrical proof of the formula $(a+b)^2 = a^2 + 2ab + b^2$.

The diversity of types and forms of a number entails the release from visual-field-dependence, which, in turn, gives new opportunities for mathematics, particularly, for the theory of functions.

The implementation of these opportunities can be vividly illustrated by Descartes' coordinate system. This invention made it possible to unify a great diversity of forms by representing them as functions. From that perspective, the idea of the perfect form loses its meaning; say, the form of a sphere, perceived as the most perfect in the ancient Greek culture, now is represented by equation $(x-a)^2 + (y-b)^2 + (z-c)^2 = R^2$, which is a particular case of the general equation $f(x,y,z) = 0$ (cf. Piaget and Garcia 1976: 90–93). Given this idea as the basic one, we can, in particular, get hold of the above mentioned difference between the modern and the antique view on equilateral and a scalene triangle.

All in all, such transformation of the basic paradigm from eidetic to functional brought about the emergence of the novel branches of mathematics operating with extremely abstract concepts like an infinite-dimensional space or δ-function. To seek for the visual images of such concepts is a thankless and useless task; they demand rather specific forms of intellectual activity to get success. In other words, in this case we can speak about a field-independent cognitive style.

To put it in a more precise way, I wish to stress that a modern mathematician, unlike an ancient Greek one, can use different cognitive strategies according to the type of problems he solves. So, exploiting the construction metaphor, if we compare the cognitive structure of a modern mathematician with that of an antique one, it seems more correct to posit a novel cognitive "floor" rather than to postulate an entirely novel construction.

Now, let us move on to the ancient Greek historiography to compare the basic cognitive models.

**The Cognitive Style of the Ancient Greek Historiography (by the Example of Treatises of Herodotus and Thucydides)**

To avoid misunderstanding, it is not out of place to emphasize that we will discuss not annals or chronicles but historiography, that is, "an orderly account of past events and of the people who participated in them, with a reasoned explanation of why things happened as they did" (Brown 1954: 830). Herodotus and Thucydides, whose historical methods can be characterized as *narrative* and *positivistic*, happen to be poles apart here; other antique historians are situated between them (Wallace 1964: 255). In that, the recognition of the cognitive background, common to Herodotus and Thucydides, is extremely important to reveal the bottom line of the antique historiography.

Let me start with the "History" by Herodotus. This historian is known as the "Father of History" because his treatise is the first example of an elaborate systematic analysis of a huge amount of historical data. To some extent, his status in science is similar to that of Euclid. Here, we focus on the first book of the "History" and start up with the methodology. In order to give a more precise analysis of the narrative structure of this book, I first marked out the three levels of narration: "external" (the basic level where people are considered social role holders and their behavior – influenced by their surroundings), "internal" (the level corresponding to feelings, thoughts, and decisions of humans as free will persons), "transcendent" (the level characterizing Gods' actions, fate, predestination, and other factors which are believed transcendent to the human world). Then, I divided the text into some structural elements, namely: "events"; "causal remarks," placed either within or in between the events, the function of which is to clarify the events or the connections between them; "expositions," introducing the information about the venue of the event, about the people engaged in it, etc., which is unknown to readers but important for further narration – "philosophical" or "existential" – as well as for "reflections" and "explanations." The events in turn were sorted out into three groups: "time markers," i.e., some bare mentions to fill the time gaps (e.g., "Not

long after the overthrow of the tyrants by the Lacedaemonians, the battle of Marathon was fought between the Athenians and the Persians"; Thuc. Hist., 1, 18; tr. by B. Jowett) (E0); the single events described in brief (E1); the events described in detail (E2) (although it was not an absolute criterion, a detailed description in common had more than 2,000 characters). Additionally, I recorded whether the event is single or iterative.

Since a comprehensive analysis of all the aspects of the narrative structure would doubtlessly lead to another long article, I will just focus on some observations important for this paper.

Firstly, 19% of the first chapter is taken by the events described in detail (E2).[8] Given that 21% of the chapter is devoted to ethnographic descriptions within expositions, we can stress a slow speed of narration; the historian's view here is the view of a spectator, sensitive to details but not a bird's-eye view of a long-term researcher.

The additional evidence for such visual-field-dependence is provided by the fact that 67% (55 from 82) of the events, described in brief (E1), turn out to be spectacular descriptions resting on a visual perception similar to a theatrical performance. Let me illustrate it with an episode of the tyrannus Pisistratus returning to Athens:

Presently his enemies who together had driven him out began to feud once more. Then Megacles, harassed by factional strife, sent a message to Pisistratus offering him his daughter to marry and the sovereign power besides. When this offer was accepted by Pisistratus, who agreed on these terms with Megacles, they devised a plan to bring Pisistratus back which, to my mind, was so exceptionally foolish that it is strange (since from old times the Hellenic stock has always been distinguished from foreign by its greater cleverness and its freedom from silly foolishness) that these men should devise such a plan to deceive Athenians, said to be the subtlest of the Greeks. There was in the Paeanian deme a woman called Phya, three fingers short of six feet, four inches in height, and otherwise, too, well-formed. This woman they equipped in full armor and put in a chariot, giving her all the paraphernalia to make the most impressive spectacle, and so drove into the city; heralds ran before them, and when they came into town proclaimed as they were instructed: "Athenians, give a hearty welcome to Pisistratus, whom Athena herself honors above all men and is bringing back to her own acropolis." So the heralds went about proclaiming this; and immediately the report spread in the demes that Athena was bringing Pisistratus back, and the townsfolk, believing that the woman was the goddess herself, worshipped this human creature and welcomed Pisistratus (Her. Hist., 1, 60; tr. by A. Godley).

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8  I counted the number of characters in the Greek text.

We can see that the pivot component of this episode is the visual image of Phya-Athena, and its structure in general takes us back to Aristophanes' or Menander's comedy.

Secondly, philosophical reflections are expressed here not through the author's words but for the most part by the extended remarks of the characters in the dialogues. For instance, the idea of happiness, extremely important for Herodotus and Ancient Greek culture in general, is put into the mouth of the eminent Athenian legislator Solon in his talk with Croesus, King of Lydia (Her. Hist., 1, 30–33). The characters' behavior and the context of the talk are fairly close to Homer's epos or the ancient tragedy, where the spectator is expected to watch the performance.

Thirdly, in order to reveal the reasons for historical events, Herodotus refers to both transcendent power (fate, Gods' envy) and human intentions, dependent on their character, social rank, view on the situation, etc. Most frequently his interpretation is guided by a cumulative principle, in other words, he gives a number of versions without reconciling them. More importantly, however, transcendent factors proved to be involved in the human life as initial reference points, and from the matter of fact, human quick-wittedness or stupidity appears to be the main reason for the historical development. A good illustration for that is Herodotus' view on oracles and signs. Given the truth of the oracles as a point beyond doubt, he defines the capacity to render oracles and signs a deciding factor for a successful action, and puts human failures down to people rather than to fate or destiny (Her. Hist., 1, 65; 1, 67–68; 1, 71; 1, 91 etc.).

So, in sum, we can conclude, that for Herodotus the cloth of history is woven by some particular people who implement their intentions and projects with an account of various circumstances such as weather, oracles, signs, etc. in order to pursue their goals most effectively.

Now, it is time to look at Thucydides' treatise. At first sight, his narrative manner has nothing in common with Herodotus' one. A notable part of the events in the 1st chapter of his "History" is described with time markers; the descriptions, resting on a visual perception, occupy just 13% (8 from 62) of the events described in brief. Nevertheless, in comparison with Herodotus, the events described in detail occupy here much more space (41.5%). Some of them (12.3%) look like quite "cinematic" stories (e.g., a sea battle between Corinth and Kerkyra [1, 48–53], or constructing the walls around Athens [1, 89–93]), but the key space here (29.2%) is occupied by talks and dialogues, invented by Thucydides. In these dialogues, the characters state their

views on the situation trying to convince the audience to follow their suggestions. Taking into account their length and position within the text, we can call them the core elements of Thucydides' treatise. The analysis of these talks leads us to the following main conclusions. Firstly, their composition resembles Euripides' tragedies. Similar to Herodotus, these talks address a listener but not a reader. Secondly, even much more intensively than Herodotus, Thucydides insists that human intentions and reasons are the main factors of historical development. The transcendental level happens to be omitted in his text.

The situation changes radically if we resort to the medieval historiography. Let me illustrate these transformations with "The History of the Franks" by Gregory of Tours. The analysis of the first chapter shows that the rhythm of the narration, dominated by time markers in this text, is much more intensive than in Herodotus' work. Nevertheless, we can also find here the description of quite "cinematic" events meaningful for visual perception. However, all of them appear to be signs of transcendent reality, the testimony of its presence in the material world; they cannot be perceived as independent entities. Here is the illustration:

At that time Quirinus, bishop of the church of Sissek, endured glorious martyrdom in Christ's name. The cruel pagans cast him into a river with a millstone tied to his neck, and when he had fallen into the waters he was long supported on the surface by a divine miracle, and the waters did not suck him down since the weight of crime did not press upon him. And a multitude of people standing around wondered at the thing, and despising the rage of the heathen they hastened to free the bishop. He saw this and did not permit himself to be deprived of martyrdom, and raising his eyes to heaven he said: "Lord Jesus, who sittest in glory at the right hand of the Father, suffer me not to be taken from this course, but receive my soul and deign to unite me with thy martyrs in eternal peace." With these words he gave up the ghost, and his body was taken up by the Christians and reverently buried (Gregory of Tours 1916: 14).

Another important feature of this text is a lack of direct causal links between the events. The historical chain of the events, so important for Herodotus and Thucydides, here breaks up into the independent sections addressing transcendental meaning of history. Only in such perspective can these events be figured out as the elements of the same chain. The particular descriptions just stress the presence of transcendental reality in the visual world. Similar to Augustine's numbers, historical events for Gregory of Tours turn into the tools in God's hands, which leads to breaking direct connections between

the events and, consequently, to overcoming the visual-field-dependence.

Later, in the culture of modernity we can find both models of historical description. On the one hand, a notable number of concrete historiographic works follow Thucydides' model. The only important difference is the omission of "Euripides' element." The direct talks of the author stand for "inserted speeches." On the other hand, the persistent search for a general law of historical development hidden from a superficial view, which we can find, say, in the treatises of Hegel or Marx, directly points at the Christian legacy. Similar to mathematics, the novel, field-independent, cognitive "floors" also emerge in historiography, which provides more flexibility to the cognitive style in modernity.

**General Discussion**

Three points should be stressed in the conclusion. Firstly, we can see that Nisbett's parallel between the ancient Greek intelligence and that of the modern West is not fairly correct (2003). The cognitive style of the ancient Greek culture can be characterized as more field-dependent than the modern Western one. To compare this result with works by Nisbett (2003) and Kitayama (2007, 2009) some specifications are needed. Thus, it seems helpful to distinguish between the peculiarities of cognitive style (and mode of life, in general) brought out in everyday behavior and deep cognitive style characteristics revealed in scientific texts. The former differs for the Japanese and the Americans, or the Americans and the Western Europeans, and so forth. The latter is shared by all of them graduated from modern universities. In this article I have examined the latter level.

Secondly, given that Vygotsky's approach (1986) is one of conceptual pillars for analysis, it would sound strange to ignore the views of Piaget and neo-Piagetians. The Piaget and Garcia work "Psychogenesis and the History of Science" (1976) is, perhaps, the most interesting for us in the scope of this article. Although the basic schema of the authors (development from intra- to inter- and, then, to translevel) seems too abstract to describe the diversity of empirical data and, at times, have met criticism from the historians of science (e.g., Kvasz 2008), the milestones of their work are in line with the perspective outlined here. The development of geometry, algebra, and mechanics from antiquity to nowadays is strictly connected with the cognitive shifts to more and more field-independent cognitive models. What raises major objections is the idea of progressive cognitive development shared by Piaget

with Vygotsky in spite of radical conceptual divergence between them. To specify these objections let us return to the difference between modern and traditional culture's intelligence from Vygotsky's perspective.

As mentioned before, traditional culture in that scope is connected with a complex mode of thinking, whereas modern culture is connected with a conceptual one. Nevertheless, the investigations of Rebecca Frumkina (2007) and her colleagues[9] found out that complex thinking characterizes cognitive decisions of the educated people in modern culture in a great number of everyday situations. The only difference from traditional culture is that they can explain their decisions and accommodate them to the experimenter's requests. As a generalization of these results we can suggest that our cognitive structure has several levels where complex thinking occupies the lowest, strongly field-dependent level, while different types of theoretical thinking are on the upper ones. In a concrete situation, guided by circumstances, we resort to the relevant "floor" of our cognitive construction. The system of oppositions, outlined in the introduction, brings out the difference in our everyday strategies based on our sociocultural backstory, whereas in a different context we could exploit other cognitive models provided by the modern system of knowledge. This peculiarity distinguishes modern culture from, say, ancient Greece, where the system of knowledge does not include a number of cognitive operations which seem obvious for us. It is also worth adding, that the factors brought about the evolution of the system of knowledge can perform on various levels, from particular socioeconomic processes to fundamental cultural shifts, such as the transformation of the basic cultural paradigm from Antiquity to the Middle Ages. And, thirdly, we need to develop the methodology of the narrative analysis of different types of text in order to compare correctly the intelligence of ancient cultures with modern intelligence. I hope this article could be the point of departure in the indicated direction.

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# Why Premodern Humans Believed in the Divine Status of Their Parents and Ancestors?

Psychology Illuminates
the Foundations of Ancestor Worship

Georg W. Oesterdiekhoff

## Introduction

The worship of the dead or ancestors could be indeed defined as a religious phenomenon. Their adherents or believers assume that the dead family members deeply govern the life of their descendants, often enough down to the smallest details. The believers communicate with their dead by prayer and sacrifice. Thus, they do not only believe in the immortality of the soul but also in the magical or divine power of the dead on the world generally and on lives of their still living descendants. The dead have therefore much more power than the living whose life depends largely on their decisions.

The ancestor worship has been therefore an important component of religious behaviour across cultures, continents, and history. Historians or ethnologists who describe the religion of a specific culture sometimes explain that this culture believes in their ancestors *or* in Olympic gods *or* in a single god of heaven. Following this, many people tend to assume that while one culture believes only or mainly in ancestors, the other culture believes in a pantheon

of high gods, and another one prefers only the highest celestial deity. Questions arise therefore: is it really true that societies chose different kinds of divinities? Are there religions without Olympic or high gods or without divine ancestors, or without a godfather in heaven? And if it is so, what factors may have caused such divergences? What theory could explain them?

According to the existing historical and ethnographic data, the parallel existence of three forms of divinities within one culture is indeed a frequent case across continents, regions, and societies: most cultures did know and adore a godfather, a pantheon of Olympic gods, and divine ancestors at the same time.[1] Differences that exist in this regard usually concern the cultic status of different divinities. However, European Christianity, recent Islam and recent developments in other world regions seem to change this picture. Especially Christianity belittled and fought against the ancestor worship during the Christianisation process over the last thousand years. Still certain forms of ancestors' cult of the dead did exist in popular Christianity in Europe at least to the era of Enlightenment, although it was weaker than the one existing in other cultures of the world.[2]

For scholars engaging in the field of religious studies, the existence of the ancestors' cult is so evident that any attempts to explain it theoretically seem to be redundant. They usually argue that this kind of cult is only a reflection of certain family or clan structures whose purpose is to support the existing social organization.[3] However, approaches such as these neglect the principle of sufficient reason. Ancestor worship can fulfil social functions only then when people believe that dead family members have magical and divine powers. This is not the case in modern societies, however. The first step, therefore, should be to explain why premodern nations developed the belief in mystical status and magical powers of their (dead) family members. I argue that such answer can be provided only on the grounds of developmental psychology which attends to developmental differences between premodern and modern nations.[4] Indeed, the ancestors' cult can be convincingly explained only in this

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1  Jensen (1992: 365–441); Le Roy (1911: 145–213); Mbiti (1970: 36–124); Eliade and Culianu (1995); Frazer (2010); Oyibo (2004).
2  Ariès (1980: 123, 776); Oesterdiekhoff (2009: 265–270).
3  Fortes (1983); Durkheim (1981); Lienhardt (1987); Middleton (1999); Bergunder (1993).
4  Ludwig Feuerbach (1985) was probably the first one to outline a general theory of religion basing on developmental psychology.