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ANTROPOGENESIS TRIAD "BRAIN – CONSCIENCE – LANGUAGE" AS CULTURAL DETERMINER

Purpose. The work deals with the study of the anthropogenesis triad "brain – conscience – language" as a cultural determinant, which allows to assume the possible range of resettlement of the first representatives of the Homo, as well as their links with Olduvai culture, i.e. the culture of Pebbles and / or Abbevillian culture. The research **methodology** is based on the application of the historical-cultural method with the use of data from archaeology and linguaantropology. The **scientific novelty** of the work consists in the representation of relatively new archaeological data, which give fundamentals to talk about the lateralization of the hominids’ brain, i.e. the beginning of abstract thinking, the development of the second signalling system (language), the formation of conscious and purposeful work, including the processing of tools, belonging to the Olduvai culture and / or Abbevillian culture. **Conclusions**. The territory of the African continent, which is hypothetically designated as the "Cradle of Humankind" is currently considered the most likely habitat for the settlement of the first representatives of the Homo; it is confirmed that archaeological finding of the early (lower) Paleolithic arethe tools of Olduvai culture or pebble culture; it has been established that the role of technology progress in the early archanthropes belongs to the Abbevillian culture, which produced stone tools and used the language of the initial stage of development, which is called the hominid language / language of hominids.

Keywords: anthropogenesis triad "brain – thinking – language", cultural determinant, representatives of the Homo, Olduvai culture, Abbevillian culture.

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Антропогенезисна тріада "мозок – мислення – мова" як культурологічна детермінанта

Мета роботи. Робота присвячена дослідженню антропогенезисної тріади "мозок – мислення – мова" як культурологічної детермінанти, що дає змогу, припустити можливий ареал розселення перших представників роду Homo, а також їхні зв’язки з олдувайською культурою, тобто культурою гальок і / або аббевільською (шельською, ранньоашельською) культурою. **Методологія** дослідження ґрунтується на застосуванні історико-культурологічного методу із залученням даних археології й лінгвоантропології. **Наукова новизна** роботи полягає у представленні порівняно нових археологічних даних, які дають підстави говорити про латералізацію мозку гомінідів, тобто початок абстрактного мислення, розвиток другої сигнальної системи (мови), формування свідомої і цілеспрямованої трудової діяльності, включаючи виготовлення знарядь праці, які належать до олдувайської культури і / або аббевільської культури. **Висновки**. Територія Африканського континенту, яку гіпотетично окреслено як "колиска людства", вважається наразі найбільш вірогідним ареалом розселення перших представників роду Homo; підтверджено, що археологічні знахідки раннього (нижнього) палеоліту є знаряддями праці олдувайської культури, або культури гальок; установлено, що роль прогресу технології у ранніх архантропів належить аббевільській (шельській, ранньоашельській) культурі, що виготовляли кам’яні знаряддя й володіли мовою початкової стадії розвитку, яку називають гомінідною мовою / мовою гомінідів.

Ключові слова: антропогенезисна тріада "мозок – мислення – мова", культурологічна детермінанта, представники роду Homo, олдувайська культура, аббевільська культура.

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Антропогенезисная триада "мозг – мышление – язык" как культурологическая детерминанта

Цель работы. Работа посвящена исследованию антропогенезисной триады "мозг – мышление – язык" как культурологической детерминанты, что позволяет предположить возможный ареал расселения первых представителей рода Homo, а также их связь с Олдувайской культурой, т.е. культурой галек и / или аббевильською (шельской, раннеашельской) культурой. **Методология** исследования основана на применении историко-культурологического метода с привлечением данных археологии и лингвоантропологии. **Научная новизна** работы заключается в представлении сравнительно новых археологических данных, которые дают основания говорить о латерализации мозга гоминид, т.е. начало абстрактного мышления, развитие второй сигнальной системы (языка), формирование сознательной и целенаправленной трудовой деятельности, включая изготовление орудий труда, относящихся к олдувайской культуре и / или аббевильской культуре. **Выводы**. Территория Африканского континента, которую гипотетически обозначают как "колыбель человечества", считается сейчас наиболее вероятным ареалом расселения первых представителей рода Homo; подтверждено, что археологические находки раннего (нижнего) палеолита являются орудиями труда олдувайской культуры, или культуры галек; установлено, что роль прогресса технологии в ранних архантропов принадлежит аббевильской (шельской, раннеашельською) культуре, которые изготавливали каменные орудия и владели языком начальной стадии развития, которую называют гоминидным языком / языком гоминид.

Ключевые слова: антропогенезисная триада "мозг – мышление – язык", культурологическая детерминанта, представители рода Homo, олдувайская культура, аббевильская культура.

Topicality of Research. Language is a product of culture in its essence, because it is determined by the development of the latter, it refers to its changes and it is updated through the cultural context. In this way, the culturological paradigm, similar to linguistic, etc., can be represented as a kind of decoder (converter) through which interdisciplinary research can be performed. Therefore, the development of language, the peculiarities of its existence, the connection with the culturological component no longer appear to be exclusively linguistic problems, but also as socio-humanitarian.

It should be noted that the development of glottogenesis (from the Greek γλῶττα "language" and γένεσις "birth", "origin") as a historical process of origin, formation of the human natural sound language (S. Burlak), the language family (D. Petrov), languages of separate ethnic groups (V. Plungyan) has always been in the focus of many scholars. However, up to now the interest is determined by a complex anthropogenesis linguacultural model, its structure helps to reconstruct the linguistic units (semantics, word formation, accentology, etc.) through the prism of the cultural discourse of the topical ontological reality. Thus, during the XX century the linguists (A. Trombetti, B. Rozenkrantsev et al), anthropologists (V. Bunakov, G. Hughes, A. Liberman et al.), palaeontologist (V. Kochetkova) tried to review the already formulated versions of the origin of the language, as well as to propose completely new ones that would probably be able to establish themselves in the scientific study of linguistic comparative studies when it comes to linguistic anthropogenesis itself.

Due to the accumulated experience of scholars from various sciences, the intensive development of glottogenesis took place in the late 70s of the XX century, when the special symposium of the American National Academy of Sciences (1976) and the UNESCO Symposium in Paris (1981) were held. In 1984, the International Society for the Study of Glottogenesis in Paris was founded.

Aim of Research. The aim of the article is to find an evolutionary connection among the processes of development of the anthropogenesis triad "brain – conscience – language" as a culturological determinant. The subject is Olduvai and Abbevillian cultures as fixators of this triad.

The problem of glottogenesis was purely linguistic; the search for its arguments and facts took place through the traditional reconstruction procedure – the comparative-historical method based mainly on the genetic material of different languages. At the same time L. Klein emphasized the obligatory interdisciplinary approach, which involves the recourse to anthropology (K. Kume et al.), archeology (F. Grane, W. Jungers, I. Schultz et al.), genogeography (O. Serebrovsky, O. and O Balanovsky et al.), paleoanthropology (F. Graine, K. Kume et al.), cultural studies (W. Jungers, I. Schultz et al.), etc., because, according to V. Alekseev, "[...] the origin of language is an extra-linguistic problem, which is beyond the bounds of linguistic science, is a complex one, i.e. it is solved by the efforts of various disciplines, and, perhaps, is not only solved at the present level of science, but essentially" [1].

Results. O. Zubov was one of the scholar who focused on interdisciplinary approach to studying the process of glottogenesis. His aim was to determine the place and time of the first human population. Integrating the views of his colleagues (B. Blake, D. Johnson, D. Johansson, V. Kimbel, R. Walter et al.), the scholar was able to predict that the territory for the resettlement of the first representatives of the Homo (approximately from 2.4 to 2,0 million years) was located on the African continent (see the works of F. Grane, K. Kume, W. Jungers, I. Schultz et al.) and was limited to the lands that are now the parts of Kenya and Ethiopia, partly – Tanzania.

This territory was hypothetically defined as the Cradle of Humankind [5, 22], as evidenced by the following findings: skull fragment from Cooby Fara, Kenya (KNM-ER 1470) [17, 7–9], lower jaw from Malawi, Kenya (UR 501) [13, 71–108], fragment of temporal bone from Baringo, Chameron formation, Tugens hills, Kenya ("Chemeron temporal" KNM-BC1) [19, 153–184] , an isolated tooth – the first lower molar from Nachuci, Kenya (KNM-WT 42718) [18, 230–240], the upper jaw of the Hadar Formation, the Kada Hadar layer, Ethiopia (AL 666-1) [16, 549–561] etc.

The above-mentioned assumptions gave an impetus to many scholars to begin the search for the first rudiments of a language that could have already been formed on the territory of the African continent, and thus to formulate a new view on the problem of the birth of a language of the first representative of the Homo.

It is believed that the origin of the language is explained as a direct consequence of evolutionary development of mankind, adaptation to the surrounding world for six million years. According to the scholars' views, during this period of time hominids could undergo several stages of adaptation, in particular: 1) transition to direct walking; 2) development of thumbs of hands; 3) changes in the process of childbirth; 4) loss of body hair; 5) further evolution of the digestive tract, which caused innervation of the intercostal muscles; 6) loss of apparent irritability, development of bending of the vocal tract, improvement of muscles, etc. Taking into account the whole spectrum of morphophysiological changes, V.P Alekseyev, the paleoanthropologist, outlining the hypothetical "hominid triad," proposes to focus on the study of the three main features inherent only in a human being: 1) forward movement (or bipedia); 2) a free hand with an opposite thumb that is capable of subtle labour operations; 3) relatively large highly developed brain [1].

Scholars postulate that the brain of Sahelanthropus had a size of 320–380 cm3, Ardipithecus – 300–350 cm3, Australopithecus afarensis – 380–450 cm3, the brain of Australopithecus africanus – 440–450 cm3 (according to data, about 500 cm3), the brain of Paranthropus boisei – 530 cm3. However, the brain of

Homo habilis had a size of 500–800 cm3 (an average size was 650 cm3), Homo rudolfensis had approximately the same the brain (775 cm3), as well as Homo georgicus (600–680 cm3). The brain significantly increased in the Archanthropes – 900–1100 cm3, even more – at the Heidelberg (for example, a representative of Homo found on the territory of Verteshsiolliosh had a brain of 1300 cm3, a representative of the cave Petralon – 1170 cm3, a representative of the cave Fontstraed, known as Fontstraed II, – 1450 cm3).

The size of the brain in the Neanderthals was about 1400–1600 cm3, which is even slightly higher than the average value typical of a modern human being – 1350–1400 cm3. However, the brain was larger in Neo-Anthropus representatives. For example, in the Cro-Magnon from the Grotto Cro-Magnon, the size of the brain was 1590 cm3 (Cro-Magnon I), 1450 cm3 (Cro-Magnon II) and 1775 cm3 (Cro-Magnon III); the Schul V representative had 1518 cm3, the Omo 1 – 1400 cm3. For comparison: the size of the brain in the Neanderthals Lya Ferrassi 1 was 1681 cm3, the Neanderthal Shanidar 1 – 1610 cm3, the Neanderthal Amud I – 1750 cm3 [5].

It is assumed that the evolution of human brain in terms of language communication ability was stimulated by interspecific competition rather than the evolutionary necessity to master some technologies and conquer the physical environment. The hypothesis of the gradual evolutionary development of language and the only "explosion" in the occurrence of a human being's linguistic ability resists the hypothesis that the process of language development has several revolutionary stages, each of which is associated with certain cognitive and social changes in human life, as well as with the general biological evolution of hominids.

Thus, the hypothesis of social development of the brain establishes the interdependence between the size of the neocortex (new cerebral cortex) and groups of primates. Such interdependence is predictable and socially explains the research of the remnants of primitive hominids. D. Bickerton's hypothesis, which is based on the study of the processes of the Creole language from the bones, tries to explain the social causes of the rapid transition from the proto-language to the full synthetic language of the ancestors of the modern human being [10].

Today, we can speak of three evolutionary stages in the development of language: 1) revolutionary changes in the process of designating objects of the world: the ability to use words, and therefore to classify objects; 2) revolutionary changes in the syntax: the occurrence of the ability to formulate complex descriptions, the pragmatic transfer of information about sources of food, relatives and populations of people living at a distance; 3) revolutionary changes in the symbolic forms of expression of thought through language: the complexity of syntax, the occurrence of the ability to narrate the legends, myths as a culturally important means of linguistic display of mental processes. At the same time, R. Foley puts forward hypothetical arguments in favour of the fact that the basis of the mimetic culture, which existed before the occurrence of the verbal language, are perceptions [15]. The principle of similarity, which was combined with the link between the mimetic action and its referent, due to the assumption of the researcher, was based on an act of direct perception, but the basic communicative means were represented as realized metaphors of action [15].

Due to the above-mentioned provision, R. Foley emphasizes the existence of three preverbal proto-languages based on perceptual perception: 1) practice of articulation by hands (or the processing and use of tools for labour); 2) social organization or language of social interaction (which is sometimes characterized as a social or emotional mind); 3) preverbal communication, which involves the use of certain signals by hand, facial expressions, gestures, as well as prosodic vocalizations, which is defined as mimetic communication [15]. Each of these proto-languages represented a primitive form of communication and information processing and became a "cognitive laboratory," where intensive communication skills as well as a source of cognitive speech were developed. Hominids studied these forms of proto-languages, which, in turn, are considered by scholars as preliminary forms of adaptation to further linguistic activity.

Scientific Novelty. Tools for labour became proto-semantic elements of preverbal proto-language, which involves the use of these tools. Proto-syntax of processing and use of tools is considered as a kind of order or sequence of procedures for the processing of tools. That is why the lateralization of the brain of hominids (the term of O. Zubov) must be complemented also by a sociogenenesis triad (the term of V. Alekseyev), which includes: abstract thinking; second signalling system (language); conscious and purposeful labour activity, including the processing of tools for labour [1]. S. Burlak asserts, "if some of the types of hominids had tools, then they also had to have the language to teach new generations to make weapons and treat them" [3, 105].

According to A. Aliman and F. Bordes, the archaeological research shows that H. habilis (sensu stricto) were the first who proceeded to the manufacture of stone tools for labour in the early (lower) Paleolithic (about 2.6 million years ago – 100 thousand years ago). These tools were simulated by the artifacts of Oldvai culture, or the culture of pebbles (approximately 2.6–1.8 million years ago) – the first technology that began the Stone Age [2; 11]. Such behaviour, according to O. Zubov point of view, played an important role in anthropogenesis as one of the forms of complex morphophysiological behaviour, which had its own "parallel" line of development, along with the main direction of the aromatic, major evolution [5, 28–29]. Anthropologist is also convinced that H. habilis (sensu stricto) began to process tools due to the presence of a highly developed brain [5, 28–29]. Let us recall, at least, the opinion of A. Turner, who noted that in a biological sense, during the period of its existence, a human being was not a highly specialized being, because, in his words, "this was facilitated by a special form of its evolution, which probably allowed to some extent to preserve the morphophysiological "neutrality," in which a significant role played by the stone industry" [7, 7–21].

According to V. Dublinsky, during this period, a language that "became the main form of communication" could be developed among the representatives of H. habilis (sensu stricto), as it is demonstrated by the research of specialists in the field of physiology of language: scientists, studying the traces of muscle attachment on the turtles of the hominids (for example, the skull KNM-ER 1470), restored the morphology of the jaws of H. habilis (sensu stricto), suggesting that this taxon had a massive language when the lips were not encountered, and therefore probably he could pronounce such vowels, as "i", "a", "u", as well as all phonetic variants of the sounds "z" and "t". However, today there is a discussion among scholars: what category ("life's noises," which gives the animal a state of rest and emotional (joy, alertness, rage)) is the fundamental of the original language (see works of V. Dublinsky).

If we talk about the role of technology's progress in the early archanthropes (600–350 BC), then I. Ivanov relates them to the Abbevillian culture, assuming that these representatives made rough stone tools, and they used the language of hominids (I. Ivanov), probably inherited from the previous (Olduvai) culture.

With the evolution of hominids, their tools became more and more exponential and more and more expedient in processing: if the Olduvai chopper can be made for about 10 shots, then Abbevillian need 60, but for the processing of the upper Paleolithic weapons it is necessary to make more than two hundred strokes, divided into 10–11 different operations. Consequently, trust in the communities of our ancestors grew – and this, according to S. Burlak, is a significant indication of the progressive development of the communicative system [3, 106]. According to the assumption of N. Toi, the archaeologist, it should be noted that "the fact that many forms of old-arm weapons are not necessarily related to "models of thinking" ("thinking patterns"), have confirmed the experiments in which unprepared people were engaged in the processing of stone tools". Monkeys also processed the tools under the experimental conditions [3, 119].

A stage in the development of the language that correlates with the resettlement of hominids, O. Tyunayev calls hominid language / language of hominids and suggests that it was in isolation by its type. The scholar suggests that archaeological cultures that correspond to hominid languages are pebble cultures and the initial stages of the Shelk culture [8, 67]. Some scholars identify the notion of hominid language and proto-language, explaining that this language is one of the stages in the development of human language, in which the vocabulary, which involves a small amount of words, exists without syntax, and the statements consisted of no more than five words [10, 23]. The transition from the preverbal speech to the verbal language (through the verbal stage of the speech) included the following steps: 1) processing of tools; 2) occurrence of social reason; 3) mimetic communication (signals with the help of hands, gestures, body language, vocalization); 3) limited verbal vocabulary without syntax; 4) full verbal language (including lexicon and syntax). At the same time, the mimesis "sets the basis for the intentional expression of thought in hominids, without which language would not have the ability to develop as a communicative system […]".

Conclusions. The habitat for the resettlement of the first representatives of the Homo was probably the territory of the African continent (Kenya and Ethiopia, partly Tanzania), which are hypothetically designated as the "Cradle of Humankind". In these territories, there was a lateralization of the brain of hominids, i.e. the stage of the formation of abstract thinking and the development of the second signalling system (language) began. These cultural loci were the place of conscious work, including the processing of tools. The latter belong to the Olduvai culture, or the culture of pebbles (about 2.6–1.8 million years ago) – the first technology that stuck the stone age.

The prospect of further research is the development of issues of anthropogenesis linguistic culture, which will become a thorough basis for the analysis of the original basic hominid dictionary, which formed the basis of the hominid language.

Література

1. Алексеев В.П. География человеческих рас / В.П. Алексеев. – М., 1974. – 351 с.
2. Алиман А. Доисторическая Африка / А. Алиман. – М., 1960. – 504 с.
3. Бурлак С.А. Происхождение языка: Факты, исследования, гипотезы / С.А. Бурлак. – М. : Астрель: CORPUS, 2011. – 464 с.
4. Бутовская М.Л. Социальная структура ранних гоминид и проблема адаптации к различным климатическим условиям в палеолите / М.Л. Бутовская // Человек заселяет планету Земля. Глобальное расселение гоминид.– М., 1997. – С. 21–28.
5. Зубов А.А. Становление и первоначальное расселение рода Homo / А.А. Зубов. – СПб. : Алетейя, 2011. – 225 с.
6. Зубов А.А. Одонтология в современной антропологии / А.А. Зубов, Н.Н. Халдеева. – М. : Наука, 1989. – 232 с.
7. Тернер А. Распространение ранних гоминид / А. Тернер // Человек заселяет планету Земля. Глобальное расселение гоминид. – М., 1997. – С. 7–21.
8. Тюняев А.А. Древнейшая Русь. Сварог и сварожьи внуки / А.А. Тюняев // Исследования древнерусской мифологии. – М. : Белые альвы, 2011. – 384 с.
9. Amaral L.Q. Loss of body hair, bipedality and thermoregulation. Comments on recent papers in the Journal of Human Evolution / L.Q. Amaral // J. Hum. Evol. – 1996. – Vol. 30. – P. 357–366.
10. Bickerton D. Catastrophic evolution: the case for a single step from proto-language to full human language / D. Bickerton // Hurford, J., et al. (Eds.). – 1998. – P. 341–358.
11. Bordes F. Le paléolitique dans le monde / F. Bordes. – P., 1968. – 200 p.

12. Bramble D.M. Endurance running and the evolution of Homo / D.M. Bramble, D.E. Lieberman // Nature. – 2004. – Vol. 432. – No. 18. – P. 345–350.

13. Bromage T.O. Paleoanthropology of the Malawi Rift: an early hominid mandible from the Chiwondo Beds, northern Malawi / T.O. Bromage, F. Schrenk, F. Zonneveld // J. Hum. Evol. – 1995. – Vol. 28. – P. 71–108.

14. Dennell R. Dispersal and colonization, long and short chronologies: how continuous is the Early Pleistocene record for hominids outside East Africa? / R. Dennell // J. Hum. Evol. – 2003. – Vol. 45. – P. 421–440.

15. Foley R.A. Speciation, extinction and climatic change in hominid evolution / R.A. Foley // J. Hum. Evol. – 1994. – Vol. 26. – P. 275–289.

16. Kimbel W.H. Late Pliocene Homo and Oldowan tools from the Hadar formation (Kada Hadar member), Ethiopia / W.H. Kimbel, R.C. Walter, D.C. Johanson, K.E. Reed, J.L. Aronson, Z. Assefa, C.W. Marean, G.G. Eck, R. Bobe, E. Howers, Y. Rak, C. Vondra, Yemane N., York D., Chen Y., Evensen N. M., Smith P. E. // J. Hum. Evol. – 1996. – Vol. 31. – P. 549–561.

17. Leakey L.S. A New Species of The Genus Homo From Olduvai Gorge / L.S. Leakey. – B. : Nature, 1964. – Vol. 202. – Is. 4927. – P. 7–9.

18. Prat S. First occurrence of early Homo in the Nachukui Formation (West Turkana, Kenya) at 2.3–2.4 Myr / S. Prat, I.-Ph. Brugal, J.-J. Tiercelin, J.-J. Barrat, M. Bohn, A. Delagues, S. Harmand, K. Kimeu, M. Kibunjia, P.-S. Texier, H. Roch // J. Hum. Evol. – 2005. – Vol. 49. – P. 230–240.

19. Sherwood R. The taxonomic status of the Chemeron temporal (KNM-BC 1) / R. Sherwood, S.C. Ward, A. Hill // J. Hum. Evol. – 2002. – Vol. 42. – P. 153–184.

20. Tobias P.V.The skulls, endocasts and teeth of Homo habilis / P.V. Tobias // Olduvai Gorge. – Cambridge, 1991. – Vol. 4. – P. 1–921.

21. Treves A. Risk and opportunity for humans coexisting with large carnivores / A. Treves, L. Naughton-Treves // J. Hum. Evol. – 1999. – Vol. 36. – P. 275–282.

References

1. Alekseyev, V.P. (1974). Geography of human races. Moscow [in Russian].

2. Aliman, A. (1960). Prehistoric Africa. Moscow [in Russian].

3. Burlak, S.A. (2011). Origin of the Language: Facts, Research, Hypotheses. Moscow: Astrel': CORPUS [in Russian].

4. Butovskaya, M.L. (1997). Social structure of early hominids and the problem of adaptation to different climatic conditions in the Paleolithic. Chelovek zaselyayet planetu Zemlya. Global'noye rasseleniye gominid. Moscow [in Russian].

5. Zubov, A.A. (2011). Formation and initial settlement of the genus Homo. Saint Petersburg: Aleteyya [in Russian].

6. Zubov, A.A., & Khaldeyeva, A.A. (1989). Odontology in modern anthropology. Moscow: Nauka [in Russian].

7. Terner, A. (1997). Distribution of early hominids. Chelovek zaselyayet planetu Zemlya. Global'noye rasseleniye gominid. Moscow, 7–21 [in Russian].

8. Tyunyayev, A.A. (2011). The most ancient Russia. Svarog and Svarog's Grandchildren. Issledovaniya drevnerusskoy mifologii. Moscow: Belyye al'vy [in Russian].

9. Amaral, L.Q. (1996). Loss of body hair, bipedality and thermoregulation. Comments on recent papers in the Journal of Human Evolution. J. Hum. Evol., 30, 357–366 [in English].

10. Bickerton, D. (1998). Catastrophic evolution: the case for a single step from proto-language to full human language. Hurford, J., et al. (Eds.), 341–358 [in English].

11. Bordes, F. (1968). Le paléolitique dans le monde. P. [in French].

12. Bramble, D.M., & Lieberman, D.E. (2004) Endurance running and the evolution of Homo. Nature, 432, 18, 345–350 [in English].

13. Bromage, T.O., & Schrenk, F, & Zonneveld, F. (1995). Paleoanthropology of the Malawi Rift: an early hominid mandible from the Chiwondo Beds, northern Malawi. J. Hum. Evol., 28, 71–108 [in English].

14. Dennell, R. (2003). Dispersal and colonization, long and short chronologies: how continuous is the Early Pleistocene record for hominids outside East Africa? J. Hum. Evol, 45, 421–440 [in English].

15. Foley, R.A. (1994). Speciation, extinction and climatic change in hominid evolution. J. Hum. Evol, 26, 275–289 [in English].

16. Kimbel, W.H., & Walter, R.C., & Johanson, D.C. and others (1996). Late Pliocene Homo and Oldowan tools from the Hadar formation (Kada Hadar member), Ethiopia. J. Hum. Evol., 31, 549–561 [in English].

17. Leakey, L.S. (1964). A New Species of the Genus Homo from Olduvai Gorge. B.: Nature, 202, 4927, 7–9 [in English].

18. Prat, S., & Brugal, I.-Ph., Tiercelin, J.-J. And others (2005). First occurrence of early Homo in the Nachukui Formation (West Turkana, Kenya) at 2.3–2.4 Myr. J. Hum. Evol, 49, 230–240 [in English].

19. Sherwood, R., & Ward, S.C., & Hill, A. (2002). The taxonomic status of the Chemeron temporal (KNM-BC 1). J. Hum. Evol., 42, 153–184 [in English].

20. Tobias, P.V. (1991). The skulls, endocasts and teeth of Homo habilis. Olduvai Gorge. Cambridge, 4, 1–921 [in English].

21. Treves, A., & Naughton-Treves, L. (1999). Risk and opportunity for humans coexisting with large carnivores. J. Hum. Evol., 36, 275–282 [in English].

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