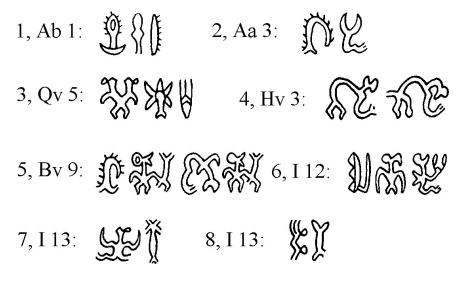


Pazifik-Informationsstelle, Hauptstr. 2, 91564 Neuendettelsau. Telefon: +49 (0) 9874/91220. Info@Pazifik-Infostelle.org. www.pazifik-infostelle.org.

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The History of One Decipherment of the Script of Easter Island



Autor: Sergei V. Rjabchikov

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Zum Autor: Sergei V. Rjabchikov is General Director of the Sergei Rjabchikov Foundation – Research Centre for Studies of Ancient Civilisations and Cultures, Krasnodar. His current research focus concerns the Easter Island script as a highly organised form of a mixed ideographic and phonetic writing system, and the interpretation of the mysterious records. Fields of research include ethnology, linguistics, archaeology, history, archaeoastronomy, the comprehensive investigations of ancient civilisations and cultures, and the mathematical investigations of sign systems. Publications include numerous articles on the Easter Island written language and Polynesian rock art and string figures, on the early Christianity (translations of Latin and Greek texts), and on difficult questions of the Russian history.

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The History of One Decipherment of the Script of Easter Island

Only 22 tablets and one royal staff covered with classical rongorongo glyphs were preserved, as well as a few wooden crafts with such signs. Thus, the number of all the signs is several thousand, but it must be taken into account that three tablets contain the same text with slight variations, and two more tablets contain a common repeating fragment of a certain text with minor differences.

The background

In the 1960s, a team of ethnographers, linguists and mathematicians, led by Yuri Knorozov, decided to study the character of the rongorongo script using mathematical methods. Were these primitive pictograms, like by the Aztecs or North American Indians, or were they highly organized hieroglyphic inscriptions, like by the Maya or the ancient Egyptians? The ethnologist Irina Fedorova and the linguist Alexander Kondrarov published the results of this research.

In the speech of the Rapanui people and in their folklore texts, there are doublings of morphemes, compare the words Makemake, turuturu and rongorongo. In the inscriptions there are structures like sequences of signs A, B, C and D of the following types: AA, ABAB, ABCABC and ABCDABCD. Having calculated the absolute and relative frequencies of the appearance of such structures in ancient folklore texts and inscriptions, and they turned out to be very close, the scholars came to the conclusion that the rongorongo writing is the hieroglyphics that convey the Rapanui (Polynesian) language.



The rongorongo glyphs on the Spanish Treaty of 1770. The lower line of glyphs reads: 17-51 54 26 21 10/16 74-74/27 Teke Kai Makoi Kahi Tinitini-Rau, i.e. "King Kai Makoi the First, (descendant) of the Tunny, (the incarnation) of (the god) Tinirau." It is Rjabchikov's decoding.

The appearance of new signs for the first 25 signs and for every next 25 signs in the inscriptions of Easter Island and ancient Egypt was also counted. Although the decreasing distribution of signs in two cases was different, the general trend turned out to be similar. This investigation also confirmed that the rongorongo writing is the hieroglyphic one, that is, a mixture of signs for words (ideograms), syllables and determinatives, i.e. special indicators for some categories of words (astronomy, religion, agriculture, and so forth).

It is also important to say several words concerning the achievements of the scholar Thomas Barthel. First of all, he published a complete corpus of inscriptions known at that time. His classification of the written artifacts is widespread among the scholars. Another valid result of Barthel was as follows: in the record on the Mamari tablet he discovered a large calendar text.

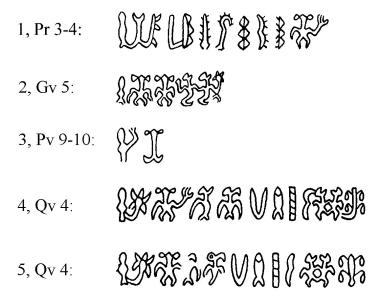
It is necessary to note the main mistake of the scholars Nikolai Butinov, Yuri Knorozov, Irina Fedorova and Thomas Barthel. They unconditionally believed in the "readings" of several boards recited by the Easter Islanders Metoro for Bishop Tepano Jaussen on Tahiti in the 19th century. That is why the decipherments based on those "readings" were fruitless.

My contribution to the study

During the decipherment of the Easter Island writing system, I compiled my own catalog of glyphs. I also drew attention to the fact that in the Rapanui words some sounds often alternated, for example, the sounds a and o, a and e, a and u, i and u, and the sounds h and r could vanish. I also took into account that the words of the Rapanui language consisted only of open syllables. And finally, it was important to know that, according to the statements of local old men, which the researcher Katherine Routledge learned on the island many years ago, the vocabulary of the Rapanui language had changed a lot. To understand the mysterious inscriptions, it was undoubtedly necessary to attract the vocabularies of other Polynesian languages.

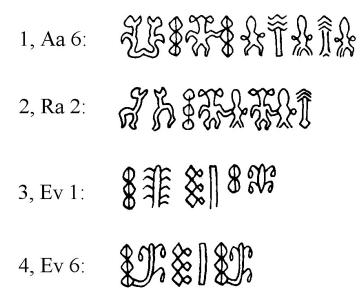
I analyzed the script using structural linguistics methods. In the inscriptions, the variants (allographs) for glyphs were first identified, then repeating groups of glyphs were found, and preliminary classification of words, word combinations, and, in some cases, sentences was carried out. For each glyph or for several glyphs, a table of all environments was compiled. As a result, the grammar of this ancient written language was reconstructed, in particular, the grammatical articles and prepositions were determined. The verbal articles were he (glyph 73), ku (glyph 19), ko (glyph 21), ha (glyph 6), the articles of nouns were te (glyphs 17, 18), ko (glyph 21, 75), ko te (glyphs 21 17), a (glyph 6), e (glyph 73) and he (glyph 73). The plural marker was nga (glyph 28). The prepositions were ki (glyph 19), i (glyph 50), a (glyph 6) and ma (glyph 26). The demonstrative pronouns were ra na (glyphs 34-46) and na (glyph 46). I found out that glyphs for whole words could turn into syllables, losing the initial vowel, for example, glyphs 4, 5 atu sometimes read tu, and glyphs 40, 41, 42 ere, are read re. On the other hand, in Polynesian languages, the phenomenon is known when the sound a is added to the end of a word without changing the meaning. Actually, glyphs 4, 5 atu convey the word atua "deity," glyph 62 toa "sugar cane; warrior" sometimes reads to, and glyph 45 pua (palm tree; to produce; to strike) sometimes read pu. The basic table of the glyphs with their readings was published by me in the Journal of the Polynesian Society in 1987.

I decided here to demonstrate the presence of the articles he and te in inscriptions. In the first fragment the structure He ... te ... te ... te is presented. In other four instances the verbal asticle he is put down, but the atricles of nouns are omitted.



The article *he* appears before verbs.

Here four examples with the article te are presented. In two parallel fragments is the report about Kuukuu (glyphs 19-19), the main explorer, who arrived on Easter Island before King Hotu-Matua.



The article *te* appears before nouns.

Do you remember that after the decipherment of the archaic Greek script, Linear B, conducted by the researcher Michael Ventris, the archaeologist Carl Blegen used the data of Ventris' grid with the set of the syllabic signs with their readings to understand an inscription where different pots were depicted as determinatives? The readings of several words confirmed the decoding absolutely! I always believed that the rongoron-go inscriptions also contained the main key to the mystery of Easter aIsland.

I myself found among the rongorongo corpus the parallel records where the eel (glyph 13 tuna) and the sprouted nut (glyph 9 niu) were represented. In accordance with the local "Creation Chant," the god-the Farher (atua-Metua) and the Eel produced the nut of the palm tree. I show two version of the text, and the first article 6 a of the personal names is omitted in the first fragment.

The text about the Eel and the nut.

The record reads as follows: 8-8 5-5 (6) 13 9 24 6 5 46 Matuamatua-atuaatua, (a) Tuna niu ai, a Tuna. "The great Father-the great god (and) the Eel (produced) the nut (as they) were united, (it was) the Eel."

Notice that the word Tuna for the designation of the mythical Eel is taken down as an ideogram (glyph 13) and as two syllables (glyphs 5 46).

This key to the rongorongo writing system allowed me to begin the basic stage of the decipherment. Let us consider the long seqence of glyphs where the combination of signs 48-15 uri is repeated several times. In the Rapanui language, ure means "son," and in the language of the Maori of New Zealand the word uri means "offspring." Thus, this record is a genealogy.



The genealogy of the famous king Hotu-Matua.

The two initial glyph read 6 8 a Matua. So, I found the list of the ancestors of King Hotu-Matua. At the end of the list the name of his distant direct forefather was determined, it was the draw-ing of the inverted fish (glyph 16). I read this glyph kahi "tunny." I knew that in compliance with the local beliefs, the sea god Tangaroa was the ancestor of King Hotu-Matua; and that deity could emerge in the shape of the valuable large fish tunny. Besides, the three depictions of male skulls decorated with the tunny

designs from Easter Island were published recently. Moreover, I have found a legend in the collection of different local stories in a book by the Roman Catholic priest Sebastian Englert where it is said that the new king made the incisions on the skull of his predecessor. In the original text the words kahi (tunny) and ika hoki (fish which is returning) are the synonyms. Really, the inverted fish represented such a fish which returned to deep waters.

They were the fishers

Consider now three parallel records with numerous glyphs 12 ika (fish). The important items were the atu fish or bonitos (glyph 4), the kahi fish or tunas (glyph 16) and the poopoo fish or jacks (glyph 56 poo). Besides, the sacred turtles (glyphs 68 44-45 honu tapu) are mentioned as rare offerings. The names of the sea animals are introduced with the grammar article he (glyph 73) and the verb pu ("to appear"; glyph 45), The corresponding word (pua) is preserved in the Hawaiian language. Interestingly, in a Rapanui myth collected by Sebastian Englert the expression he pu te kahi is presented. This phrase means, in context, "a tunny emerged" or "a tunny was caught."

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Three parallel texts tell of the collected marine resources.

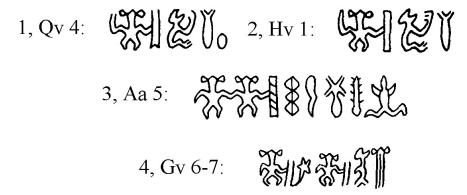
Let us continue to examine the inscriptions also devoted to the fishery.

The fishery was the important business.

In accordance with the first fragment, the great moon goddess Haua (glyph 14) angled (glyph 50 hi) the tunny (glyph 16) and came (glyph 7) with it ashore. Indeed, according to a myth published by Thomas Barthel, the deity Haua once caught the fish mahore. It is not surprising because in the Ha-waiian mythology the goddess Hina is the hostess of all the fishes. In the second fragment, after the word kahi (glyph 16) for the tunny, stands the word atureature "numerous fish ature" (glyphs 4-40-4-40) which were the baits. We know that Old Rapanui taha means "frigate bird." But in the Mangarevan language, the word taha signifies "to come from the sea to the shore." The scholar Macmillan Brown reports that the fishery was pernitted only when the first egg of the sooty tern was brought to Easter Island. Really, the record means: "Four months were united (i.e., it was September), when the tunnies came (i.e., were carried) to the shore." In conformity with the last two fragments, bonitos (glyph 4 atu) together with other fish (glyph 12 ika) were carried to the shore. Here the same verb taha (glyph 44) was taken down.

They were the peasants

The natives were engaged in agriculture.

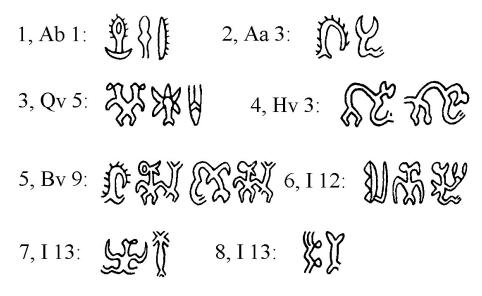


The natives were capable tillers as well.

Several sentences are found where the common verb hotu (glyphs 6-4) and its incomplete reduplication (glyphs 6-6-4), hohotu, mean "to bear fruit." This word is preserved in the Tahitian language. In the two first fragments it is said that the palm trees bore nuts (the sign of the round is the determinative). In the third fragment the growth of gourds is described. The word ipu (glyphs 50 45) means "gourd" in the Mangarevan languade, and the same word means "calabash made of gourd" in the Rapanui language. At the end of the fragment, the determinative stands. It is the drawing of the fruit decorated with the flower. In the fourth fragment, it is said that the trees (glyph 11 manga meaning "branch") and the sweet potatoes (glyphs 19-26 kumaa = kumara) bore fruits.

The religion was the hub of life

I gathered several fragments of the religious inscriptions.



The names of deities are decoded.

In the first fragment, glyphs 3 14 Hina Haua are presented (the first sign is the crescent, and the second one represents a hat, i.e., hau in the local language). Glyphs 73 and 46 have been deciphered above. We read the name Hena. Thus, this is the reflection of the local folklore, where the goddess Hina Hau Mara and her husband, the god Hena Naku, are mentioned. In the second fragment, again the deity Haua who was indeed the moon goddess Hina is mentioned. In the third fragment, the words Hatu Tiki (glyphs 6-7 1) are written. We well know from the "Creation Chant" that one of the names of the god-creator was Tiki-te-Hatu. The other folklore texts about the creation of the Universe give the name of this god in the form Makemake. Fragment 4 contains this name, Makemake (glyphs 31-31). According to the ethnologist Alfred Métraux, the deities Haua abd Makemake were the constant companions. Actually, fragment 5 contains the names of Haua and Make (i.e., Makemake). The last three fragments contain the names of the deities Manu Mea (glyphs 72 64), Moko Pua (glyphs 69 45), (notice that this name is known in the reduplicated form Mokomoko Puapua), and 52 27 Hitirau.

The local calendar is also decoded

Thomas Barthel disclosed a big calendar record (Ca 6 - 9), and this was an addition key to the rongo-rongo writing system. I published the results on my study of calendar records in a paper published in the Sovetskaya etnografiya journal in 1989. I had received a booklet from the archaeologist and lin-guist Roger Green which was dedicated to the reconstruction of the Old Rapanui calendar. That publication was a good support in my research.

The names of three phases of the moon.

The careful study of that calendar text within the boundaries proposed by Barthel showed that it began with the moons (nights) Ata (glyph 4 Ata from Atu) and Ari (glyphs 24-24 Ariari). But where was the name of the moon (night) Tireo known also as Tueo which preceded those moons? I found this record outside the boundaries devised by Barthel. Consider the first fragment. It reads 3 17 4-40 marama te Tirea (or Turea). In order to realize it, I used the reading of glyphs 4-40-4-40 for the name of the ature fish. Besides, the names of one and the same fish, aturere and atirere, were known in the Maori vo-cabulary; in the Maori lunar calendar, the moon Tirea was rendered.

In the second fragment, the name of the goddess Hina (glyph 2) is associated with the word po "night" (notice that the same glyph 56 po was used to write the name of the fish poo, otherwise poo-poo) and with the name Hohotu (glyphs 6-6-4; the incomplete reduplication of glyphs 6-4) denoting the full moon Hotu.

In the third fragment, the day Matua (glyph 8) is described. This time interval including the night and day is described with the help of glyphs 56/39 po, raa "night, day."

The cult of the bird-man

Annualy, sooty terns nested on the off-shore islet Motu Nui. The spring festival was held on this occa-sion at the ceremonial village of Orongo. The servants of the victorious warriors waited for the first egg on the islet. The warrior who received that sacred egg was proclaimed the bird-man.

In 2013, I delivered the paper concerning the astronomical and ethnological components of the cult of bird-man on Easter Island. I deciphered the whole record about the new bird-man Utu-Piro. One can assume that it was significant event because his servant was Maurata, grandson of King Nga Ara.



Sergei V. Rjabchikov read his paper to the 19th Annual Conference of the New Zealand Studies Association together with the Centre of Pacific and Asian Studies, Radboud University, Nijmegen on June 28, 2013.

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The new bird-man Utu-Piro was once proclaimed.

In this record, the bird-man was called the corpse and the frigate bird (glyphs 12 44 ika, taha). I believe that this characteristic is essential. The bird-man received the egg in which the god Tiki-Makemake was embodied, so the bird-man in his one-year strict isolation from most people was equated with that god.

The ethnologists Nikolai Butinov and Lyubov Rozina studied the wooden carving of the bird-man that was housed at the Kunstkammer in St. Petersburg. The figurine had the sunken belly, and the scholars concluded that it represented the corpse.

On the other hand, in a Rapanui myth collected by Sebastian Englert it is said that once King Tuu-ko-Iho saw the ghosts with ribs, namely Hitirau and Nuku te Mango, and they were called in the text with term ika kino "the bad corpses." So, the term ika (fish; victim; corpse) was the standard term for gods.

Why was the bird-man called the frigate bird? There are several rongorongo texts (Aa 5, Ab 7) where the god Tiki-Makemake had the feathers of that bird. Therefore the bird-man as the living incar-nation of the deity also had such features.

I disclosed another record (Ab 2) where the bird-man was called the corpse, the great god, the winner and the frigate bird. Hence every bird-man was the alive corpse connected with the dead according to the local religion.

I found in the book by Macmillan Brown merely several words about the new bird-andfish ritual or cult of Orongo. One can presume that the cult of the bird-man continued to exist in this form when the olden society disappeared entirely.

The second script tau

In 1882 the German ship Hyäne visited Easter Island. Captain Wilhelm Geiseler gathered many inter-esting facts about the life of locals. In particular, he learned that in the past the king and chiefs corre-sponded by sending letters to each other. It is clear that this could be done quickly with the help of the cursive variant of the classical rongorongo script.

The native Tomenika called this version of the writing tau and put down a cursive record on a sheet for Katherine Routledge in 1914.

Apparently, the signs on the Spanish Treaty which were written by the local chiefs or maybe by king Kai Makoi the First himself during the stay of Captain Felipe González and his people on the is-land in 1770 were the cursive rongorongo glyphs.

In 1997, I published a paper in the Journal de la Société des Océanistes where I read the epithet of the god Tangaroa (the cursive glyphs 4-26 Tuma) near the big drawing of the tunny. In 2014, I published in the Anthropos journal the record matua "hull of the canoe" (the cursive glyphs 26-4) which was incised on a panel near the drawing of a canoe; moreover, on the stone which could be used by ancient fishers as a sinker to catch the ature fish, the record ature (the cursive glyphs 4-41) is rendered.

Is my decipherment correct?

The text "He timo te akoako" written by Roman letters was retained in the manuscripts which were discovered by Thor Heyerdahl on Easter Island. Irina Fedorova translated that text, it was the report about the pupil (akoako) who carved (timo) the glyphs on the tablet, he learned (akoako) the glyphs, he directed (tuu) signs and turned (taha) the tablet; the first signs during that exercise were glyphs of the bird kuia (the bird booby) and the bird kapakapa. It is obvious that that this text was dedicated on the whole to the initiations of sons or boys (here hua) who transformed themselves at that ceremony into the strong and swift warriors (manu vae eha, i.e., "the birds with four legs"). In 1993 I published the translation of the corresponding record on the Tablette échancrée (Db 2) in the Etnograficheskoe obozrenie journal. But the end of this line was unclear for me.

EXONTIFE CONTRACTOR Db 2:

One of versions of the famous text "He timo te akoako".

In 1994 the information about the Katherine Routledge archive became widely known, and as result, I read several versions of the "He timo te akoako" text.



Sergei V. Rjabchikov studied the inscriptions on the Tablette échancrée at the General Archives of the Congregation of the Sacred Hearts of Jesus and Mary in Rome in 2015.

Let us read the glyphs at the end of line Db 2: 7 14 15 49-49 Tuu Hau ro, Ariki Mau-Ariki Mau. It is the description of the star Antares called Tuu Hau "The star of the King" and Ariki Mau-Ariki Mau "The great King." Why was it inscribed in this inscription? Annually, the first morning rising of that star happened a few days before the day of the summer solstice. I think that the initiations were conducted on that day indeed. In the book on the Maori astronomy, published by Elsdon Best, the almost forgotten star Ariki-Rangi "The king – the sky" that marks the sixth month (November-December) is mentioned. It could be the archaic Maori name for the star Antares. Notice that the indigenous Polynesians watched the red star Antares in the sky, and they knew that the red colour was the symbol of the persons of high rank.

But what is presented in the field notes by Routledge? The variants of the famous text contain such parallel phrases: tu tu te hau and e te hau topa mai te ragni. The first expression is tuutuu te Hau "the great (i.e., bright) star of the King = Antares." The second expression is e te Hau topa mai te ragni "(the star) Antares which was born from the sky".

In reality, I interpreted those five glyphs with the help of Routledge's field notes. In 1990 the researcher Alan Drake published the record that was found at Orongo; the original figure was made by the archaeologist Georgia Lee.



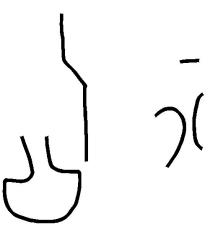
The rongorongo record on a stone slab from Orongo.

We know that every summer, in December, the initiations of children were conducted at Orongo. I think that this inscription was dedicated to the initiations of boys. The remnants of two glyphs 139 ta-ka (round) are inscribed in the upper part of the inscription. Routledge published a drawing where the backside of the body of an initiated boy which was decorated with rounds is shown. At the right, the record in the lower part of the inscription contains seven glyphs 41 ere or here (including the allo-graphs) and one glyph 25b hua. They read 41 41 41 41 41 41 25b 41 here, here, here, here, here, here hua, here "numerous sons." For me, this record with such a reading is the main evidence of the correctness of the decipherment.

The perspectives of my studies

In 2018 Sean Hixon and coauthors published the set of photographs of the stone hats lying near several ceremonial platforms. The rongorongo records are seen there very well. I managed to decode them. Such inscriptions can serve as the new source on the ethnology and history of Easter Island.

Let us consider the drawing engraved on a stone hat at Vinapu.



The rongorongo record on a stone hat at Vinapu

This inscription reads as follows: 22 149 4/140 Ao Hotu. Atua Vina Pu. "(It is) the power of (the tribal union) Hotu (= later Hotu-Iti). (It is) the deity of the Bearing Moon (= Vinapu)". Thus, the eastern tribes possessed the ceremonial platform Ahu Vinapu because it was the foremost astronomi-cal observatory during many centuries. Interestingly, I published the reading of glyph 140 with the accompanying glyphs (Bv 2) in my paper at the web site arxiv.org of the Cornell University in 2016.

The publication of the inscription on that stone hat again confirms my decipherment of the rongorongo writing. I look forward to the publication of the other photographs of stone hats. So, my investigation will be continued. I believe that it is necessary to prepare and publish the new grammar of the Rapanui language as well as the corpus of all the folklore texts with the careful reconstruction of the Old Rapanui language.

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