# THE QUEST FOR INFORMATION RETRIEVAL: AN INSCRIBED RELIC FROM ANCIENT *RAPA NUI* (EASTER ISLAND) – Part I.

Tomi S. MELKA (Las Palmas de G.C., Spain) tmelka@gmail.com

Robert M. SCHOCH (Boston, Massachusetts, USA) schoch@bu.edu

This article focuses on an antique wooden fragment from Easter Island engraved with a single *rongorongo* (RR) glyph. Based on our analysis, we conclude that the most likely hypothesis regarding this fragment is that it dates to pre-missionary times (prior to 1864) and was part of some type of weapon or fighting instrument, either of a functional or ritual nature. It may represent a portion of a handle for an obsidian-tipped spear or knife. The "bird"-like RR glyph on the fragment belongs in all probability to a category that has previously been connected in the scholarly literature on RR with "*slumber*", and hence "*waning*", "*demise*", and "*death*". Its presence on a hand-weapon or ceremonial warlike artifact suggests a meaningful real-world, "non-literary", context for this glyph.

**Keywords:** "bird"-like motif, glyph of the /600/-class, "Lutz-Terasaki fragment", mako'i (Thespesia populnea), mata'a, patina, pre-missionary era, Rapa Nui (Easter Island), rongorongo script

"El desorden y el esparcimiento en que se encuentran los más importantes documentos originales de la cultura pascuense, permite sospechar que en algunos museos y colecciones particulares se encuentren algunas otras piezas auténticas" [The chaos and dispersal in which the most important original documents (= rongorongo artifacts; our note) of Rapanui culture are found, allows us to suspect that a few other authentic pieces may be encountered in some museums and particular collections].

Ramón Batista Campbell<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> BATISTA CAMPBELL, R. *La Herencia Musical de Rapanui: Etnomusicología de la Isla de Pascua* [The Musical Legacy of Rapanui: Ethnomusicology of Easter Island], p. 379.

#### Introduction

Rongorongo (= RR) inscriptions of Easter Island are notoriously scarce. This is in stark contrast to the 1864 report by Joseph-Eugène Eyraud (1820 – 1868) that "On trouve, dans toutes les cases, des tablettes de bois ou des batons (= bâtons) couverts d'espèces de caractères hiéroglyphiques" [One finds in all the houses wooden tablets or staffs with sorts of hieroglyphic characters]. Today, there are only a couple of dozen generally accepted rongorongo inscriptions that have survived, most of which are on wooden tablets, in whole or as fragments.

In his 1958 monograph on *rongorongo*, Thomas S. Barthel recognized twenty-four *rongorongo* inscriptions, to which he gave the designations of "A" through "X" (these remain the standard designations used by most researchers in the field, including the present authors).<sup>3</sup> Another inscription, the so-called "*Paris* Snuffbox", discovered in 1961, was accepted as authentic by Barthel, and, later, coded under the letter "Y".<sup>5</sup> The current samples range in length from

two juxtaposed glyphs (Barthel,  $1958 \rightarrow \text{"J"}$  / Fischer,  $1997 \rightarrow \text{"RR } 20\text{"}$ , the inscription found on a *rei miro* now held by the British Museum, London) to well over 2000 glyphs (Barthel,  $1958 \rightarrow \text{"I"}$  / Fischer,  $1997 \rightarrow \text{"RR } 10\text{"}$ , inscription on a staff a meter and a quarter long that is now held by the National

<sup>&</sup>lt;sup>2</sup> English translation of EYRAUD, J-E. Lettre du Frère Eugène Eyraud, au T. R. P. Supérieur Général de la Congrégation des Sacrés-Cœurs de Jésus et de Marie, p. 71, quoted by FISCHER, S. R. Rongorongo: The Easter Island Script, History, Traditions, Texts, p. 12.

<sup>&</sup>lt;sup>3</sup> See BARTHEL, T. S. Grundlagen zur Entzifferung der Osterinselschrift, pp. 14–33, 83–84.

<sup>&</sup>lt;sup>4</sup> BARTHEL, T. S. Rongorongo-Studien (Forschungen und Fortschritte bei der Weiteren Entzifferung der Osterinselschrift), p. 373: "Wir geben dem neuentdeckten Fragment innerhalb des Corpus Inscriptionum Paschalis Insulae den Kennbuchstaben 'Y'" [We assign therefore to the newly discovered fragment of the Corpus Inscriptionum Paschalis Insulae the index alphabetic letter "Y"].

<sup>&</sup>lt;sup>5</sup> See also FISCHER, S. R. *Rongorongo...*, pp. 429–432. The "*Paris* Snuffbox" (known in French as *La Tabatière*), dimensional size  $3 \times 7, 1 \times 5$  cm, inv. #71.1962.47.5, is held currently at *Musée du quai Branly – Jacques Chirac* (Paris); cf. HORLEY, P., POZDNIAKOV, K. *L'Écriture* de *l'Île de Pâques*, p. 81, Fig. 1; VAN HOOREBEECK, A. *La Vérité sur l'Île de Pâques*, p. 255, derives similar measures for the artifact: "*Cette tabatière, improprement appelée 'pot a tabac'* (*elle est trop petite*), *mesure, selon Barthel*: *longueur*: 71 mm, *largeur*: 46 à 47 mm, *hauteur*: de 26 à 28 mm. *Le Musée de l'homme m'a donnée*: 70, 50 et 25 mm respectivement" [This snuffbox, improperly called 'a tobacco case' (it is very small), measures, according to Barthel: length, 71 mm; width, 46 to 47 mm; height: 26 to 28 mm. Musée de l'Homme has supplied me (with the following): 70, 50, and 25 mm in that order].

Museum of Natural History, Santiago, Chile). In addition to these inscriptions, mostly found on wooden tablets, which form the core of the RR corpus (the authenticity of some of these has been disputed),<sup>6</sup> various *rongorongo*-like glyphs are found in other contexts, such as on wooden statuettes, skulls, and among rock art.<sup>7</sup> Here we present for consideration a wooden fragment bearing a *rongorongo* glyph (see Section *Background and Recovery*). Based on our reconstruction of the original object, this glyph has a potential context, which may reveal a number of clues about its nature and purpose. Although not a perfectly advantageous situation, as discussed further below, the RR glyph appearing on the artifact merits attention in terms of applied methodology and corpus-based tenets.

By extension, the monumental setting of many ancient Egyptian inscriptions (quite often bearing hymns, panegyrics, and laudatory titles and epithets to divine and royal personages), or the physical disposition of Linear B writings

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<sup>&</sup>lt;sup>6</sup> See MÉTRAUX, A. Two Easter Island Tablets in Bernice Pauahi Bishop Museum, Honolulu; FISCHER, S. R. Rongorongo.... For artifacts bearing rongorongo and rongorongo-like glyph sequences that have been uncovered since FISCHER published his 1997 monograph, see SCHOCH, R. M., MELKA T. S. The Ranitoki (Rangitoki) Bark-Cloth Piece: A Newly Recognized Rongorongo Fragment from Easter Island; SCHOCH, R. M., MELKA T. S. The Ranitoki (Rangitoki) Fragment: Further Analysis of a Short Rongorongo Sequence on Bark-Cloth from Easter Island; MELKA, T. S., SCHOCH, R. M. Exploring a Mysterious Tablet from Easter Island: The Issues of Authenticity and Falsifiability in rongorongo Studies; SCHOCH, R. M., MELKA T. S. A "Sacred Amulet from Easter Island –1885/6—": Analyzing Enigmatic Glyphic Characters in the Context of the rongorongo Script.

<sup>&</sup>lt;sup>7</sup> cf. HARRISON, J. P. The Hieroglyphics of Easter Island, With Plates xx and xxi, p. 371; HOUGH, W. Notes on the Archeology and Ethnology of Easter Island, p. 883, Fig. 6; LEHMANN, W. Essai d'une Monographie Bibliographique sur l'Île de Pâques, p. 261; BALFOUR, H. Some Ethnological Suggestions in regard to Easter Island, or Rapanui, pp. 362–363, FIG. 15; ROUTLEDGE, K. (Mrs. SCORESBY ROUTLEDGE). The Mystery of Easter Island; MÉTRAUX, A. Ethnology of Easter Island; ESENBAUR, H-M. Untersuchungen über den Vogelman-Kult auf der Oster-insel; LEE, G. The Rock Art of Easter Island: Symbols of Power, Prayers to the Gods; RAMÍREZ ALIAGA, J. M., HUBER, C. Easter Island – Rapa Nui, a Land of Rocky Dreams; DEDEREN, F. Corpus Rapa Nui. Inventaire Mondial de la Statuaire en Bois de l'île de Pâques; and discussion in Section Contextual Comparisons: The "Lutz-Terasaki" Glyph in a Broader Corpus-based Perspective of this article.

<sup>&</sup>lt;sup>8</sup> cf. WILDUNG, D. Egyptian Saints: Deification in Pharaonic Egypt; VON BECKERATH, J. Handbuch der ägyptischen Königsnamen; LEPROHON, R. J. The Great Name: Ancient Egyptian Royal Titulary.

on clay tablets (mostly bearing accounting / archival records), have been similarly useful in guessing, and later in determining, the kind of information contained therein. The above examples and many others unquoted here, involve the rapport between the glyphs / signs and the object(s) on which they are engraved.

The applied sign inventory and other conventions in our study are based on Barthel. Although quite imprecise and adopted as a measure of compensation for anything better, Barthel's code is not utterly wasted. It is a reference for quick retrieval of particular glyphs and repeated glyph-sequences and it offers a research tool on which to revise and build, whilst seeking a better indexing in the future. A different approach – known in the RR research all through the last century and a half – boils down to *nicknames* which conveniently draw on the outer shape of signs. Hence, various RR glyphs are facetiously known (or not) under other descriptors. A benefit of the technique is the precise or moderate determination of the naturalistic and non-naturalistic character of a glyph, e.g., #/V538/ on Ia7 is not likely to be a long-distance migrating bird or the representation of a crater swamp; it bears more similarity to a half-human / half-shark hybrid creature. Likewise, in case of sign #/700/ on Cb2 (= Cv2), the odds are in favor of water-borne organism, a fish, so we

may call it the "fish"-shaped sign /700/. 13 A problem with this approach,

<sup>&</sup>lt;sup>9</sup> cf. BROSIUS, M. Ancient Archives and Archival Traditions: Concepts of Recordkeeping in the Ancient World; DUHOUX, Y. Interpreting the Linear B Records: Some Guidelines.

<sup>&</sup>lt;sup>10</sup> BARTHEL, T. S. Grundlagen zur Entzifferung der Osterinselschrift.

<sup>&</sup>lt;sup>11</sup> GELB, I. J. A Study of Writing, p. 278, Note 2, in commenting on the work of BARTHEL, T. S.; BUTINOV, N. A., & KNOROZOV, Y. V. in the fifties of the past century, pointed out, "[...] scholars who have worked in the Easter Island field have not succeeded in providing us with a clear-cut list of different signs occurring in the texts". Despite numerous and commendable individual and/or collective efforts, the essence of GELB'S (ibid., p. 278, note 2) observation remains valid sixty-plus years later.

<sup>&</sup>lt;sup>12</sup> cf. FISCHER, S. R. Rongorongo..., p. 218; DURANTON, R. Encoding and Imaging the Rongorongo Corpus; MELKA, T. S. A Developmental Continuum for the rongorongo Script of Easter Island, Part I.

<sup>&</sup>lt;sup>13</sup> See e.g., an assessment from HEYERDAHL, T. *The Art of Easter Island*, p. 208, "Some very few [rongorongo signs; our note] are naturalistic effigies and the rest, probably the great majority, are non-figurative characters whose terminal ends are embellished with the addition of human, bird, and mammal heads, fish tails, or stray limbs". Otherwise, for a nineteenth century author describing flamboyantly the rongorongo glyphs, see HARRISON, J. P. *The Hieroglyphics of Easter Island*, With Plates xx and xxi; cf. the "Small Santiago Tablet".

however, is that perceptual analogies and glyphic identification – plus the latter coinage and use of a "nickname" – can be intuitively conducted, throwing scholars and readers into unneeded confusion and all sorts of disagreements (see **Appendix** in the second part of the article). John Linton Palmer is probably the first to raise such a question. <sup>14</sup> Not for nothing does he insinuate that J. Park Harrison's description of symbols (= rongorongo signs) are far from what he claims.

"No sooner had these casts [of *rongorongo* tablets; *our note*] arrived in England than several savants began the task of trying to decipher them. Of these, Mr. Park Harrison seems the most zealous. He has read two Papers (now on the table) about them, <sup>15</sup> before the Anthropological Institute. As, however, he had no Rosetta stone, so to say, by which to correct his suppositions, his attempts do not seem to have had the success they merited; and I must confess that my eyes do not see the symbols as he describes them [...]".

In what follows, we abide by Robb's multi-layered model and rule out the code-breaker's single-mindedness in rendering the archaeological records completely transparent and in identifying each symbol with its literal referent. Consider also that the presumed values (semantic or not) and/or concepts underlying the signs – commonly related to the *rongorongo* scribal tradition – should be embedded in the ancient Easter Island's socio-religious background and natural environment, as their conditioning factors. Any ascribed value and concept without cultural consistency and without corresponding to an epigraphic context would increase the likelihood of *randomness* and *conflict*. Falsification of proposals is crucial for keeping up a healthy scientific practice thereof. Seminary of the conflict of the conf

<sup>&</sup>lt;sup>14</sup> PALMER, J. L. On Some Tablets Found in Easter Island, p. 256.

<sup>&</sup>lt;sup>15</sup> Most assuredly, PALMER, J. L. *On Some Tablets Found in Easter Island*, is referring here to the 1874 and 1876 articles *The Hieroglyphics of Easter Island*, *With Plates xx and xxi* and *Note on Five Hieroglyphic Tablets from Easter Island* by HARRISON, J. P. <sup>16</sup> ROBB, J. E. *The Archaeology of Symbols*, p. 341.

<sup>&</sup>lt;sup>17</sup> For instance, one cannot expect (by any stretch of imagination) the pre-missionary RR scribes to have chronicled in their tablets "the singing of cicadas (*Neotibicen linnei*) and crickets (*Gryllus campestris*)" or described varieties of "peach or cherry fruit desserts" (simply because they were unknown to them).

<sup>&</sup>lt;sup>18</sup> cf. MELKA, T. S. *The Corpus Problem in the* Rongorongo *Studies*, pp. 116–117; MELKA, T. S., SCHOCH, R. M. *Exploring a Mysterious Tablet from Easter Island: The Issues of Authenticity and Falsifiability in* rongorongo *Studies*.

A few technical terms clarify their use throughout the text. Rongorongo script is the key choice reserved for the glyphic marks representing the assumed semantic and/or phonetic values of the pre-missionary language of Rapa Nui. As we do not handle in this study theoretical grammatology, these terms remain for the most part unaffected by controversy (for additional debate on theoretical / practical terminological issues, see Y. Wang). <sup>19</sup> Similarly, without entering into fine details, "glyph" and "sign" denote a discrete rongorongo unit which bears notationally a relationship with pre-missionary semantics and/or speech.<sup>20</sup> They are operationally isolated by blank space (= separated from other glyphs along the carved surface). "Element", in contrast, admits a constituent part of a glyph, especially when they appear compounded / affixed.21 "Combination", "compound", "fusion", and "conflation" are introduced whenever two or more signs are connected / merged into a complex form, whether in static or contorted poses.<sup>22</sup> The large number of such *complex forms*, attested amid the glyphic sequences, compels us to emphasize that modern eyes might strain to notice them consistently and clearly. Yet, back then, i.e., in the pre-missionary times, the training and years-long disciplined practice let rongorongo scribes / chanters "read" compounds with ease or relative ease. And, of course, it is important to point out that the reproductions of glyph tracings are based on Barthel's Grundlagen... (made by draftsman Bodo Spranz). In special cases, however, Fischer and Horley are enlisted for their higher quality glyphic duplicates.<sup>23</sup> Particular glyphs across the text are accompanied by a tiny image to facilitate the connection with Barthel's code-number.<sup>24</sup> The bullet symbol "•"

<sup>&</sup>lt;sup>19</sup> WANG, Y. What Are We Calling "Latin Script"? Name and Reality in the Grammatological Terminology.

<sup>&</sup>lt;sup>20</sup> Regarding the codification of speech in many real-world scripts (whether an incipient or a more standardized system), an important caveat here is the following observation, "One of the most important facts of writing is that in many ways the written sign underrepresents the spoken sign"; see ROBERTSON, J. S. The Possibility and Actuality of Writing, p. 32.

<sup>&</sup>lt;sup>21</sup> cf. FISCHER, S. R. Rongorongo..., p. 403; see also GUY, J. B. M. General Properties of the Rongorongo Writing, p. 53, who uses the bigram "modular element".

<sup>&</sup>lt;sup>22</sup> Among the earliest published authors remarking upon the presence of compounds in the *rongorongo* script, are: VON MACLAY, N. M. *Ueber die "Kohau rogo rogo" oder die Holztafeln von Rapa-Nui*, p. 81; DE LONGPÉRIER, A. P. *Inscriptions Polynésiennes*, p. 153; DALTON, O. M. *On an Inscribed Wooden Tablet from Easter Island (Rapa Nui) in the British Museum*, p. 6.

<sup>&</sup>lt;sup>23</sup> FISCHER, S. R. *Rongorongo...*; HORLEY, P. Rongorongo *Tablet Keiti*; HORLEY, P. *Comparative Structural Analysis of* Rongorongo *Script and Rapa Nui Songs*.

<sup>&</sup>lt;sup>24</sup> This technique is not unprecedented in the *rongorongo*-related investigations; see e.g., HARRISON, J. P. The *Hieroglyphics of Easter Island, With Plates xx and xxi*;

(in Times New Roman font 9) is applied synoptically, i.e., it shows correlations or coincidences between rongorongo glyphs, sequences, and/or known artifacts. There are also cases when certain glyphic elements (usually constituents of compounds) are underlined for the sake of the disambiguation and/or comparison, e.g.,  $/256.711-69/ \leftrightarrow /V730.69/$ , or /60:678a/.

Finally, when possible, vernacular words are used. Comparable European terminology may go with the vernaculars as "parallels", not as an exact translation or overlap, e.g., 'ariki [chief / ruler]; mahute [paper mulberry tree / bark-cloth]; mako'i [Thespesia populnea / rosewood of Oceania]; mata'a [volcanic glass, obsidian / spear-head or stemmed cutting / scraping tool]; pukao ["top-knot", "crown", headdress made of red scoria], 25 etc. 26 The reverse apostrophe-like symbol (/'/) suggests the glottal occlusion used for common or proper Rapanui names. 27

#### **Background and Recovery**

A wooden fragment (Fig. 1) inscribed with a *rongorongo* glyph recently surfaced from a private collection (February 2019), where it had resided since

HABERLANDT, M. Über Schrifttafeln von der Osterinsel; or in modern times, FISCHER, S. R. Rongorongo...; HARRIS, M., MELKA, T. S. The rongorongo Script: On a Listed Sequence in the recto [verso; repaired] of Tablet 'Mamari', Part I. Evidently, the pre-Barthel authors / researchers did not make use of code-numbers, as specified in BARTHEL, T. S. Grundlagen..., pp. 84–150.

<sup>&</sup>lt;sup>25</sup> cf. PALMER, J. L. A Visit to Easter Island, or Rapa Nui, in 1868, p. 178; THOMSON, W. J. Te Pito te Henua, or Easter Island, pp. 498–499; BALFOUR, H. Some Ethnological Suggestions in regard to Easter Island, or Rapanui, pp. 369–371; JOYCE, T. A. The Mystery of the Easter Island Images, p. 30; MÉTRAUX, A. Ethnology of Easter Island, PLATE 6C, "STONE HAT, AHU-TE-PITO-TE-KURA"; HEYERDAHL, T. The Art of Easter Island, PLATE 6a, b, c, d; LEE, G., et al. Secondary Applications of Rock Art at Coastal Sites of Easter Island (Rapa Nui), pp. 162–170, 174; Figures 4, 5 bottom, 6, 7, 11 top / bottom, 16 bottom, 17, 18, 19 bottom, 24, 25 top, 27 top, 28, and 29; HIXON, S. W., LIPO, C. P., McMORRAN, B., HUNT, T. L. The Colossal Hats (pukao) of Monumental Statues on Rapa Nui (Easter Island, Chile): Analyses of pukao Variability, Transport, and Emplacement.

<sup>&</sup>lt;sup>26</sup> cf. GUIART, J. Problems of Methods in Interpreting Easter Island Data, p. 113.

<sup>&</sup>lt;sup>27</sup> See e.g., BLIXEN, O. La Oclusión Glótica del Pascuence y Algunas Observaciones sobre la Posición del Pascuence dentro del Grupo de Lenguas Polinésicas [The Glottal Stop in Rapanui Speech and Some Observations regarding the Position of Rapanui in the Group of Polynesian Languages], pp. 1–2; DU FEU, V. Rapa Nui (Descriptive Grammars), p. 183; FISCHER, S. R. Rongorongo..., Preface, p. x.

1989. Here we use the term "inscribed" along the lines of Fischer's<sup>28</sup> conception, namely: "*Inscribed' defines an intentional non-ornamental usage of glyphs*". However, we note that this definition is potentially incomplete, as it does not let us know if the non-ornamental usage of *rongorongo* implied semantic (symbolic) or phonetic information.

One of us (= RMS) is acquainted with the former owner of this wooden fragment, and thus was able to acquire access to it in order to study it in detail (the specimen is now stored in an undisclosed location). It is a small piece (approximately 3.7 cm by 3.4 cm by 2.5 cm in maximum dimensions) of worked, shaped, and worn wood that was sawn off of some larger object tapering to a somewhat pointed tip (Fig. 2b). The fragment bears a single *rongorongo* glyph, and evidently it fails to qualify for a long inscription, such as those held in the SSCC's Congregation, Rome, Italy.<sup>29</sup> On the back of the piece (the non-incised side) there is damage that appears to have been "repaired" at one point with modern wood putty (Fig. 2a). Initial inspection of the glyph by RMS convinced him that is does not fall into the same category as the glyphs seen on such very late Rapanui objects as the "*Lateran* Tablet" or the "Concepción *îka* Tablet", <sup>30</sup> but rather pertains to the "[...] *indigenous classical script*", <sup>31</sup> and thus is worthy of further study.

<sup>&</sup>lt;sup>28</sup> FISCHER, S. R. A Provisional Inventory of the Inscribed Artifacts in the Three Rapanui Scripts, p. 177.

<sup>&</sup>lt;sup>29</sup> Many of the surviving *rongorongo* exemplars are fully carved with signs along their surface(s) and edges, as if their authors were drawn by an aversion toward *horror vacui* (= fear of emptiness). This scribal behaviour may have to do with the increased scarcity of the material support (wood) on Easter Island, as frequently commented by early and late visitors and scholars. The fear (or dislike) of leaving empty spaces is given in other cultural domains. Several commemorative stelae and similar monuments from the classical Maya period; cf. PROSKOURIAKOFF, T. *A Study of Classic Maya Sculpture*; PARSONS, L. A. *The Origins of Maya Art: Monumental Stone Sculpture of Kaminaljuyu, Guatemala, and the Southern Pacific Coast*; the work of the goldsmith and engraver Jean Duvet (1485 – 1562); see EISLER, C. T. *Master of the Unicorn: The Life and Work of Jean Duvet*; or the too cramped decorum of Baroque churches (seventeenth to eighteenth centuries); cf. PARKINSON ZAMORA, L., KAUP, M. *Baroque New Worlds: Representation, Transculturation, Counterconquest*, evince the past artistic delight in filling up any free room / corner.

<sup>&</sup>lt;sup>30</sup> See discussion and illustrations in IMBELLONI, J. Las 'Tabletas Parlantes' de Pascua, Monumentos de un Sistema Gráfico Indo-oceánico [The 'Talking Tablets' of Easter Island, Monuments of an Indo-Oceanic Graphic System], p. 105, f; BARTHEL, T. S. Grundlagen..., p. 34; BATISTA CAMPBELL, R. La Herencia Musical de Rapanui: Etnomusicología de la Isla de Pascua [The Musical Legacy of Rapanui: Ethnomusicology of Easter Island], p. 383; VAN HOOREBEECK, A. La Vérité sur

The details of the early history of the fragment are unknown. According to the previous owner, it was apparently collected in the nineteenth or early twentieth century and subsequently appeared at a tribal arts fair in Basel, Switzerland, in the early 1970s. At various times in its history it was part of the Bernhard Lutz Family Collection (Basel, Switzerland) and was also owned by the New York dealer, collector, and connoisseur George Terasaki (1931 – 2010). At some point the fragment was attached to a transparent acrylic stand. In honour of its previous owners, we here designate this fragment the "Lutz–Terasaki fragment".

# Contextual Comparisons: The "Lutz-Terasaki" Glyph in a Broader Corpus-based Perspective

We are going to examine, at this juncture, the particular shape of the glyph

as it appears on the "Lutz-Terasaki fragment" (= "L-T fragment"). Since it lacks contiguity or continuity with other presumable rongorongo signs, the positioning of different variant-forms across the surviving corpus, in concert with its nature (single or compound glyph [?]), becomes an imperative in the process. Of note is the concept of the "scribal variant"; "morphological variation"; "allograph", meaning, RR glyphs stand for "topologically different shapes" in a complementary distribution. 32 Other authors rationalize them as signs not "written in the same way every time [...]", "allograph /ˈælə gɪæf/. A non-contrastive unit in a writing system; a member of a grapheme [...]", or "[...] allograph, namely, a particular way of writing the letter". 33 The use of variants runs through almost the entire corpus, revealing it to be a systematic habit among the former scribes and assumed local schools. 34

l'Ile de Pâques, pp. 258–259, Plate XIX, middle image; WIECZOREK, R. M., HORLEY, P. The Replicas of rongorongo Objects in the Musée du Quai Branly (Paris). <sup>31</sup> FISCHER, S. R. A Provisional Inventory of the Inscribed Artifacts in the Three Rapanui Scripts, p. 177.

<sup>&</sup>lt;sup>32</sup> According to TEULINGS, H. L., SCHOMAKER, L. R. B. *Unsupervised Learning of Prototype Allographs in Cursive Script Recognition*, p. 62.

<sup>&</sup>lt;sup>33</sup> SASSOON, R., GAUR, A. Signs, Symbols and Icons: pre-History to Computer Age, p. 30; ROGERS, H. Writing Systems. A Linguistic Approach, Appendix D. Glossary, p. 289; LEVY, N., WOLF, L., DERSHOWITZ, N., STOKES, P. A. Estimating the Distinctiveness of Graphemes and Allographs in Palaeographic Classification.

<sup>&</sup>lt;sup>34</sup> cf. e.g., GUY, J. B. M. On a Fragment of the "Tahua" Tablet; FISCHER, S. R. Rongorongo...

In this section the main focus is on glyph #  $/664/\sqrt[3]{8}$  and #  $/674/\sqrt[3]{8}$  in light of their proportional and contour similarity to the "L-T" sign. Each case is presented below in Figs. 3, 4, 5, and 6, with the symbol of a pointer " $\downarrow$ " (font 10) marking the targeted glyph; images and code-numbers follow Barthel's *Grundlagen*... in turn. Of course we could argue that Barthel's numeric inconsistencies are of no help in concordance terms (see especially Fig. 3). Whilst the point stands correct, the implemented 1958-code should be treated only for heuristic purposes along the sequences. In contrast, the structural and visual similarities must gain precedence during the cross-checking(s).

## **Glyph** /664/

Glyph # /664/ according to Barthel<sup>35</sup> occurs on Aa5 • Cb14 (= Cv14) •

Pr11 (Fig. 3), whereas as a variant (= V) also on Er7 (Fig. 4). These specific occurrences, together with other ones recorded in the works of K. Pozdniakov, T. S. Melka, P. Horley,  $^{36}$  will be equally pursued.

Pozdniakov,<sup>37</sup> in addition to Barthel's observations,<sup>38</sup> reports that # /664/ is realized as an allomorph on Ca9 (= Cr9) and Bv2 (Fig. 3). Readers should keep also in mind that slight and/or strong modifications in the guise of omissions, compressions (short-cuts), transpositions (reversions), or occasional "[...] varying intercalations"<sup>39</sup> within sequences are commonplace in the script.<sup>40</sup> Rongorongo, as an "early script", lacks orthographic standardization and strikes a chord with other "cognate" systems. In this context, R. K. Englund,<sup>41</sup> a researcher of the (Sumerian) proto-cuneiform and of proto-Elamite, is worth quoting,

<sup>36</sup> POZDNIAKOV, K. Les Bases du Déchiffrement de l'Écriture de l'Ile de Pâques; MELKA, T. S. Research Notes: "Santiago Staff" and "Honolulu Tablet 3629"; MELKA, T. S. "Harmonic"-like Sequences in the rongorongo Script; HORLEY, P. Comparative Structural Analysis of Rongorongo Script and Rapa Nui Songs; HORLEY, P. Rongorongo Tablet Keiti.

<sup>&</sup>lt;sup>35</sup> BARTHEL, T. S. Grundlagen..., p. 144.

<sup>&</sup>lt;sup>37</sup> POZDNIAKOV, K. *Les Bases du Déchiffrement de l'Écriture* de *l'Île de Pâques*, p. 301, Fig. 7.

<sup>&</sup>lt;sup>38</sup> BARTHEL, T. S. Grundlagen...

<sup>&</sup>lt;sup>39</sup> FISCHER, S. R. Rongorongo..., p. 220.

<sup>&</sup>lt;sup>40</sup> cf. BARTHEL, T. S. Grundlagen..., p. 167.

<sup>&</sup>lt;sup>41</sup> ENGLUND, R. K. The State of Decipherment of proto-Elamite, p. 140.

"One of the more important tasks ahead of us will be an attempt to eliminate from the current proto-Elamite sign list as many of the very numerous variant forms as possible [...]. These numbers are a clear indication that the writing system as it has been transmitted to us was in a stage of flux, in which a scribal tradition had been unable to care for standardization of characters".

Glyph /664/ is in fact part of a palindromic-like sequence on Aa5, serving as the "opening bracket" to the sequence in question, with the parallel glyph /469/ engaging in as the "closing bracket". The preceding compound /306.10/ to /664/ is, as nearly as we can tell, an "introductory" glyph, announcing the beginning of a new chunk of text. Glyph /469/ acts at the same time as an "opening bracket" in the second palindromic sequence of Aa5 – comparable series are found on Aa1 • Ab7 • Bv8 • Ra1. Its "closing" counterpart is eventually /471-60/  $^{\circ}$  .

Scribal variants become evident in the next quasi-parallel passages  $Ca9 \cdot Cb14 \cdot Bv2$ . The twosome /670/2000 (Ca9 = Cr9), glyph /664/2000 (Cb14 = Cv14), and /484/2000 (Bv2), despite not being identical as to their outward shape, function along similar lines in their respective sequences (Fig. 3). Concerning the "bird"-like signs /670-670-637/20000 on Ca9 = Cr9), M. Harris  $^{43}$  – in applying a method known as Latent Semantic Analysis (LSA)  $^{-44}$  evaluated the similarity among several glyphs on the recto of tablet "Mamari": a similarity threshold of ".8" was reported for /670-670-637/. The high value offers further reassurance as for their allomorphic status.

<sup>&</sup>lt;sup>42</sup> For more details, see MELKA, T. S. *Palindrome-like Structures in the* rongorongo *Script*, pp. 159–161, 163.

<sup>&</sup>lt;sup>43</sup> See HARRIS, M. An Evaluation of LSA Methods to the Retrieval of Genre and Glyph-to-Glyph Similarity in the rongorongo Inscriptions.

<sup>&</sup>lt;sup>44</sup> LSA is based on the *Singular Value Decomposition* (= SVD) of a matrix of word counts; the similarity between texts / words (= *RR inscriptions / glyphs*, in our case) is measured by applying Cosine or Pearson's Correlation to the resulting SVD matrix; cf. DUDA, R. O., HART, P. E., STORK, D. G. *Pattern Classification*; LANDAUER, T. K., LAHAM, D., DERR, M. *From Paragraph to Graph: Latent Semantic Analysis for Information Visualization*; MANNING, C., PRABHAKAR, R., SCHÜTZE, H. *Introduction to Information Retrieval*, pp. 373–375, 378–382; HARRIS, M. *An Evaluation of LSA Methods to the Retrieval of Genre and Glyph-to-Glyph Similarity in the* rongorongo *Inscriptions*.

Pr11-sequence, on the other hand, whilst coming close to Qv1-2, shares no more than glyph # /664/ with Ca9 (= Cr9) • Cb14 (= Cv14) • Bv2, meaning, it is not a parallel passage. In reference to Aa5, however, it appears to share a few

other glyphs: /699-699/ This (Pr11) versus /255?-254/ Existing (Aa5), and

/81/ (= /700:8/)  $\stackrel{\text{log}}{\omega}$  (Pr11) versus /V8/  $\stackrel{\text{log}}{\omega}$  (= /8:700/) (Aa5). The bottom-up configuration ("fish tail":"starred disk")<sup>45</sup> in opposition to the inverted, i.e., top-down form<sup>46</sup> ("starred disk":"fish tail") seems to be spontaneous, hence inconsequential for the retrieval of the general meaning in the context.

Of high interest to the study is glyph /664/ found on Er7 (see Fig. 4, and Barthel on its occurrence frequency). As a variant-form, it is close in shape to the "L-T fragment". Different tracings of the section in which /V664/ is attested are presented below (Fig. 4). In the sequential renderings of glyphs, Barthel files the code-numbers /V664-91-8-9/. Later amendments would include Fischer, with his tracings revealing glyphs /8/ and /9/ as juxtaposed, i.e., /8.9/ per Barthel's alphanumeric code. Close inspection of various photographs assisted Horley in tracing a more reliable shape, tagging thus the glyph under discussion as /664?/ $^{50}$  As seen, the revised tracings involve certain "excrescences" on the right-upper limb (= "wing"), prompting the author to use the symbol "?" – reserved for cases where full certainty is at stake.  $^{51}$ 

Given the existence of similar minor "excrescences" or intended embellishments in many of the known variant-glyphs, Barthel's /V664/ (plus the attestations on Aa5 • Cb14 [= Cv14] • Pr11), are so satisfactorily close to one another that one may deem them interchangeable, having, however, the same semantic value.

101u., p. 55.

<sup>&</sup>lt;sup>45</sup> HEYERDAHL, T. *The Art of Easter Island*, p. 206, speaks of "*star-shaped sun symbols* [...]" found on the written tablets of Easter Island.

<sup>&</sup>lt;sup>46</sup> For additional instances, see GUY, J. B. M. *On a Fragment of the* "Tahua" *Tablet*, p. 372.

<sup>&</sup>lt;sup>47</sup> BARTHEL, T. S. Grundlagen..., p. 144.

<sup>&</sup>lt;sup>48</sup> Ibid., p. 55.

<sup>&</sup>lt;sup>49</sup> FISCHER, S. R. Rongorongo...

<sup>&</sup>lt;sup>50</sup> HORLEY, P. Rongorongo *Tablet Keiti*, p. 50.

<sup>&</sup>lt;sup>51</sup> See BIANCO, J. Thomas Barthel et le Déchiffrement de l'Écriture Pascuane (lère partie), p. 17: "La lecture incertaine de certains signes se marque par un point d'interrogation" [The uncertain reading of some signs is marked by a question marker]; MELKA, T. S. "Harmonic"-like Sequences in the rongorongo Script, p. 118: "[...] the question marker '?' [is]... used for a tentative or an unidentified RR sign".

Furthermore, the occurrence of the /600/-class glyphs on Ia • Ta • Gv, encoding in essence prosopographic information in threesome patterns, <sup>52</sup> is of like importance in capturing semantic values and calligraphic variants in

typologically different texts (see Fig. 5). An exclusive glyph-form (/D670/, in Barthel's *Grundlagen...*) on Ia7 is barely a *hapax*.<sup>53</sup> Rather, it is a plusvariant of # /664/ flaunting a leftward "forked-palm arm / wing"<sup>54</sup> (the element or "affix" /64/ per Barthel), plus an upper "embellishment" (coded via lower-case /s/, per Barthel), usually responding to a casual aesthetic criterion or gratification.

Since Horley's tracings<sup>55</sup> may supersede in general those of Barthel's,<sup>56</sup> especially in the case of text "Ta", the appended Barthel's code in Ta7 requires amendment: from /V76/ (marked with a hourglass-like \$\mathbb{Z}\$ symbol) to a "shark"-like glyph /720/ or /724b?/ (see Fig. 5). As such, it agrees with the "fish"-shaped glyph /700/ on Ia7's "triad". The replacement or inter-substitution of "fish" and "shark'-like glyphs is observed in other topically related sequences.

Specifically, the inverted "fish"-shaped glyph /700x/ (Aa6) is paralleled by a

<sup>&</sup>lt;sup>52</sup> BARTHEL, T. S. Resultados Preliminares del Desciframiento de las Kohaurongorongo de la Isla de Pascua [Preliminary Results of the Decipherment of Easter Island's Kohau-rongorongo]; BUTINOV, N. A., KNOROZOV, Y. V. Preliminary Report on the Study of the Written Language of Easter Island; GUY, J. B. M. Some Observations Drawn from the Putative Genealogy of Tablet G; MELKA, T. S. Research Notes: "Santiago Staff" and "Honolulu Tablet 3629"; HARRIS, M., MELKA, T. S. The Rongorongo Script: On a Listed Sequence in the recto [verso; repaired] of Tablet 'Mamari', Part II, pp. 255, 261.

<sup>&</sup>lt;sup>53</sup> The term to be understood after TEUBERT, W., ČERMÁKOVÁ, A. Corpus Linguistics: A Short Introduction, p. 63, "Such a word [= glyph; our note], for which we have no more than one citation, is called a hapax legomenon (Greek: 'read only once')"; or → hapax graphomenon (written only once; our comment).

<sup>&</sup>lt;sup>54</sup> In view of its frequency of occurrence, the "forked-palm arm / hand" /64/ appears to be a diagnostic feature of the scribal style applied on the "Santiago Staff" (= text "Ia"). Consider that this inscription, together with the "Small Santiago Tablet" (= text "Gr/v"), incorporates especially rich, labor-intensive glyphic detail(s) testifying to the proficiency and artistic obsession of their creators; cf. MELKA, T. S. Research Notes: "Santiago Staff" and "Honolulu Tablet 3629".

<sup>&</sup>lt;sup>55</sup> HORLEY, P. Comparative Structural Analysis of Rongorongo Script and Rapa Nui Songs.

<sup>&</sup>lt;sup>56</sup> BARTHEL, T. S. Grundlagen...

"shark"-like glyph /721/  $^{\circ}$  embedded in Ra3.<sup>57</sup> A comparable exchange of these marine creatures occurs on Hr3 ("Great Santiago Tablet") with the last two glyphs /256.<u>711-69</u>/  $^{\circ}$  conflated in the compound /<u>V730.69</u>/  $^{\circ}$  on Cb12 (= Cv12), "Mamari" tablet.<sup>58</sup> These nearly parallel passages with strong stylistic interpretations by each pre-missionary scribe would seem to require further study, especially in terms of allography and poly-functional use of the discussed glyphs.

#### **Glyph** /674/

Glyph # /674/ according to Barthel occurs on Gv2 as a compound form /674.76/ (see Fig. 6).<sup>59</sup> The Gv2-sequence is delimited by the presence of "phalloid" glyph /76/, repeated in various shapes and formatted sequences across Gv:

A. Barthel's tracings<sup>60</sup> are not fully accurate and only high-resolution images from different angles may convey the complete profile of certain glyphs – the suffixed glyph /76/ in the lower section of the compound in this particular case<sup>61</sup> (Fig. 6). Although the frequency of /76/ is linked with "triadic" (threesome) structures, exceptions are not missing by any means. No doubt the German

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<sup>&</sup>lt;sup>57</sup> cf. ÁVILA FUENTEALBA, F. *Ensayo de Estudio Visual de las Tablillas* rongorongo [(An) Essay of Visual Study of the *rongorongo* Tablets], p. 52, Figura 50; HORLEY, P. Structural Analysis of *rongorongo* Inscriptions, p. 30, Figure 5, Aa6 ↔ Ra3.

<sup>&</sup>lt;sup>58</sup> cf. ÁVILA FUENTEALBA, F. *Ensayo de Estudio Visual de las Tablillas* rongorongo [(An) Essay of Visual Study of the *rongorongo* Tablets], p. 31, Figura 25.

<sup>&</sup>lt;sup>59</sup> BARTHEL, T. S. Grundlagen..., p. 145.

<sup>60</sup> Ibid

<sup>61</sup> See the black and white photographs of "Gr" and "Gv" in HARRISON, J. P. The Hieroglyphics of Easter Island, With Plates xx and xxi; IMBELLONI, J. Las 'Tabletas Parlantes' de Pascua, Monumentos de un Sistema Gráfico Indo-oceánico [The 'Talking Tablets' of Easter Island, Monuments of an Indo-Oceanic Graphic System], Lámina III [Plate III]; CAMPBELL, R. B. La Herencia Musical de Rapanui: Etnomusicología de la Isla de Pascua [The Musical Legacy of Rapanui: Ethnomusicology of Easter Island], p. 375; the color image of Gv in WIKIPEDIA. Rongorongo text G; RAMÍREZ ALIAGA, J. M., HUBER, C. Easter Island – Rapa Nui, a Land of Rocky Dreams, p. 121; and MNHN (Santiago de Chile), Tablilla de Madera con Escritura [Wooden Tablet (Featuring) Writing (= "Small Santiago Tablet"; our note)]. Given the examination of the above sources, we admit that in terms of mastery and refined style, the scribe went full blast in the "Small Santiago Tablet".

epigrapher was alert to the accumulation of scribal variants in the corpus, "Die Formgebung bestimmter geometrischer Details verrät eine große Zahl individueller Handschriften" [The sign-shape conveys geometrical details that reveal a great number of idiosyncratic (hand)writings]. <sup>62</sup> Yet, even a trained and competent mind such as Barthel's could not avoid at times misattributions

regarding the "jumble" of rongorongo signs. Thus, /D9?/  $\stackrel{\text{left}}{\rightleftharpoons}$ , a derivate form from glyph /9/ per Barthel,  $^{63}$  is indeed a spelling variant of /780/ :

/781/ 64 Misattributions may be interpreted in terms of *limited manual means*; discrepancies in the data materials (tracings versus code-numbers); photographs of poor quality; and the visual strain of the epigrapher, especially when considering the rich and subtle interrelations among the glyph configurations / affixations.<sup>65</sup> As such, the strict analysis of two or more co-

<sup>&</sup>lt;sup>62</sup> BARTHEL, T. S. Grundlagen..., p. 159.

<sup>&</sup>lt;sup>63</sup> See, in this context, BIANCO, J. Thomas Barthel et le Déchiffrement de l'Écriture Pascuane (lère partie), p. 17: "Les signes non identifiés, par suite de détérioration, et des ligatures non usuelles se désignent par D majuscule (dérivé)" [The non-identified signs, due to deterioration, plus the unusual compounds, are designated by an uppercase D (derivate)"; DURANTON, R. Encoding and Imaging the Rongorongo Corpus. p. 43, "The question – directly asked to Barthel during private working sessions – about the use of prefix 'D' versus prefix 'V' (both used to note major variations of shape of a Number) was never given a satisfactory answer"; GUY, J. B. M. General Properties of the Rongorongo Writing, p. 56, "Barthel occasionally resorts to two prefixes: a capital V for 'variant' and a capital D for 'derivation', but the difference between the two remains unclear. Again he is at times inconsistent in their use".

<sup>&</sup>lt;sup>64</sup> cf. HARRIS, M., MELKA, T. S. *The* Rongorongo *Script: On a Listed Sequence in the* recto [verso; *repaired*] *of Tablet* 'Mamari', p. 127, Part I; MELKA, T. S. *A Developmental Continuum for the* rongorongo *Script of Easter Island*, Part I. The full range of attestations is given on tablets Br6 • Gv2 • Ia10 (staff) • Hr3 • Hr10 • Pr3 • Pr10 • Or2.

<sup>65</sup> See especially "Les erreurs du dessinateur" [The errors of the drawer], "Les erreurs du catalogue" [The errors of the catalog], and "Des exemples faux" [False examples], in BIANCO, J. Thomas Barthel et le Déchiffrement de l'Écriture Pascuane (lère partie), pp. 19–20; POZDNIAKOV, K. Les Bases du Déchiffrement de l'Écriture de l'Île de Pâques, p. 294; FEDOROVA, I. K. About One Glyph of kohau rongorongo, p. 152, "Forty years have passed since the publication by Barthel [= 1958; our note] and, of course, some of his materials and documents need definition and correction"; FISCHER, S. R. Rongorongo..., pp. 218–219; "\* Tableaus, basic shapes, and variations", "\* Raw materials", and "\* Errors and fuzziness" in DURANTON, R. Encoding and Imaging the Rongorongo Corpus, p. 43; GUY, J. B. M. General Properties of the Rongorongo Writing, pp. 55–57, and HORLEY, P. Rongorongo Tablet

similar glyphs<sup>66</sup> faces the problems of over- and under-distinguishing (i.e., *over-differentiation*) and *under-differentiation*). In devising a nomenclature (= codenumbering) or in applying statistical measures, either of them tends to lead to errors — the so-called *error propagation effect*.<sup>67</sup> The question of sign identification (including intended or non-intended distortions / interferences, i.e., the *signal-to-noise ratio*, in information science terms) is decisive, and constantly dealt with in archaeological decipherment, palaeography, and cryptography.

Tablet "G", likewise, offers clear-cut corroborating evidence that the script was *in a flux* due to the occurrence of several original, re-imagined glyph-forms (fusions or not), undetected elsewhere.<sup>68</sup> In this sense, we have but to look with the eyes of an experienced RR scribe while he was incising and/or disambiguating the meaning of these "atypical" glyphs.

In view of the above analysis, a basis may be conceded for the following: the

"L-T" glyph argues for a "crossbreed" of /664/ ("body") and /674/ (tilted "heron"-like neck + "long beak"). We are, however, in a position to suggest that

the closest shape to the "L-T" glyph is that of glyph /V460.77/ (?) on  $Gv4^{69}$  (take note of the fact that Barthel misidentified it, assigning therefore

Keiti, p. 49, "The deeper problem is that Barthel's tracings and transcriptions do not match each other".

<sup>66</sup> See the statement of POZDNIAKOV, K. Les Bases du Déchiffrement de l'Écriture de l'Ile de Pâques, p. 295, in the subsection "Le catalogue" on the discrimination of graphic variants, "[...] je ne m'autorisais à traiter deux graphèmes comme variantes d'un même signe qu'à condition de trouver régulièrement (au moins deux fois) la correspondance de ces graphèmes dans des contextes identiques (c'est-à-dire dans des textes ou des fragments parallèles)" [(...) I do not give myself the authority to consider two graphemes as variants of the same sign unless the correspondence of these graphemes is found regularly (at least twice) across identical contexts (that is, across the texts or the parallel passages)].

<sup>67</sup> MELKA, T. S. A Developmental Continuum for the rongorongo Script of Easter Island, Part I; cf. also SHANNON, C. E. Communication Theory of Secrecy Systems, p. 670, in enciphering or transmission contexts, where "an error of one letter [...] leads to a large number of errors in the deciphered text".

<sup>68</sup> cf. HARRIS, M., MELKA, T. S. *The* Rongorongo *Script: On a Listed Sequence in the* recto [verso; *repaired*] *of Tablet* 'Mamari', Part I, p. 126; MELKA, T. S. *A Developmental Continuum for the* rongorongo *Script of Easter Island*, Part I.

<sup>69</sup> For a clear picture of this particular glyph found on the *verso* of the "*Small Santiago* Tablet", see CHAUVET, C-S. *L'Île de Pâques et ses Mystères*, Figure 161; RAMÍREZ ALIAGA, J. M., HUBER, C. *Easter Island – Rapa Nui, a Land of Rocky Dreams*, p.

code-numbers based on the alleged components /V460/ + /77/; for further discussion, see below the subsection *Single or Complex Glyph* [?]). Having ourselves examined the *rongorongo* corpus for years, it could already be stated that functional considerations did not strictly prevail over the aesthetic ones.

*Bottom line*: not unlike the usual glyphic conventions,<sup>71</sup> the (highly) idiosyncratic glyph-forms were recognizable to the skilled *rongorongo* scribes / chanters: hereafter, the applicable tablet context – plus the specific underlying genre(s) – aided *a fortiori* the retrieval of information.

#### **Single or Complex Glyph** (?)

The question whether the "*L*–*T*" glyph is *single* or *complex* could be purely speculative (*prima facie*) and its determination should be made with reserved optimism. As already stated, the corpus – as we have it – is not very helpful in terms of size, representativeness, and chronological coverage; different researchers seem to go their own way in breaking glyphs into component parts and obtaining different figures as to the total occurrences. The differences respond to the lavishness of various glyph-forms which comprise intricate and hardly noticeable variants at times, – or to a personal assessment of the shape and value of a particular sign. The pertinent contrast and analysis of parallel sequences is a must in both cases; if such parallels are in short supply, ambiguity may be happening on any given examination.

The first necessary step in the case of the "L–T" glyph is the analysis and interpretation of its constituent parts. Barthel settles on the "beak"-shape as an autonomous glyph – see three types (a, b, c) of the "long beak"-glyph /678/ in his *Sign form plate 7 (Reference index numbers 600–699)*. Otherwise, its "body" is possibly fitting in the /600–658/ inventory, in line with the matrix-

<sup>121;</sup> and MNHN (Santiago de Chile), *Tablilla de Madera con Escritura* [Wooden Tablet (Featuring) Writing (= "Small Santiago Tablet"; our note)].

<sup>&</sup>lt;sup>70</sup> BARTHEL, T. S. *Grundlagen...*, p. 59. Handling an unidentified script with a small number of inscriptions is evidently a tough matter; however, BARTHEL'S apparent mistakes do not put down his epigraphic accomplishments in *Grundlagen...* 

<sup>&</sup>lt;sup>71</sup> By "usual glyphic conventions", we are referring to the iconic-like nature and detailed outlining of a large part of the attested RR signs. It is safe to say that constant interaction and feedback between master-scribes and motivated novice learners must have facilitated the acquisition of such conventions.

<sup>&</sup>lt;sup>72</sup> MELKA, T. S. *The Corpus Problem in the* Rongorongo *Studies*.

<sup>&</sup>lt;sup>73</sup> BARTHEL, T. S. Grundlagen...

clean parallel in glyph # /546/ W, representing visibly an inconsistency for Barthel's code. The specific examples with excised "bodies" are detected in the conflation (N631:678a/ (Aa1); in the juxtapositions /1.678b/ (Br7); /545.678a/ (La); /2.678a/ (La); in the conflations /666/ (preferably, /60:678a/) (Ab2); /676/ (preferably, /23:678a/) (preferably, /700.678a/) (Sa2). In morphological terms, it appears quite plausible; yet, since the principle of pars pro toto is applied far and wide along the corpus, the point does not give comfort to the distinctiveness of glyph /678/. To put it in layman's terms, the situation with the "removed" bodies suggests that scribes practiced some tacit shorthand: glyph-element or "affix" /678a/ , as a prominent part, stands for the whole shape of glyph /670/ (see parallel sequences on the "Great Santiago"; "Small St. Petersburg"; "Great St. Petersburg" tablets versus "Great Washington" Tablet, i.e., Sa2). Two observed examples are fusions /678ay:64/

glyph # /600/ Oddly enough, the "headless" body of the /600/-class has a

/670:700/ (Ia14), i.e., shorthand (involving the "beak" section) versus shorthand (involving the "body" section). The picture is further complicated by

 $(Ma2)^{78}$  and  $/700.\underline{678a}$ / (Sa2) versus  $/\underline{V670}:11$ / (Ia6) and

<sup>&</sup>lt;sup>74</sup> BETTOCCHI, L. *Antigua Escritura* rongorongo *de la Isla de Pascua*: *Los Prestigiosos Objetos del Museo Nacional de Historia Natural de Santiago de Chile* [The Ancient *rongorongo* Writing of Easter Island: The Prestigious Artifacts of "Museo Nacional de Historia Natural", Santiago de Chile], p. 33, Fig. 23, displays the variation range of the matrix-glyph /600/ across the corpus; other allomorphic signs related to the /600/-class are evidenced as well.

<sup>&</sup>lt;sup>75</sup> BARTHEL, T. S. *Grundlagen*... cf. footnote 70 above.

<sup>&</sup>lt;sup>76</sup> See POZDNIAKOV, K. Les Bases du Déchiffrement de l'Écriture de l'Ile de Pâques, p. 296, Fig. 4, c; MELKA, T. S. "Harmonic"-like Sequences in the rongorongo Script, pp. 125–126; MELKA, T. S. A Developmental Continuum for the rongorongo Script of Easter Island, Part I.

<sup>&</sup>lt;sup>77</sup> MELKA, T. S. *Palindrome-like Structures in the* rongorongo *Script*, pp. 166–167.

<sup>&</sup>lt;sup>78</sup> The tracing of the combination /678ay:64/ is based on FISCHER, S. R. *Rongorongo...*, p. 503.

the fact that there are many interchangeable variants across the /400/- and /600/- "bird"-like series; "bird"-like series; where a choice of them is incorporating aesthetic / otiose details. As some allographs are attested very scarcely across the corpus, one can be easily distracted – or worse, perplexed. Hence, the attribution of the "L-T" glyph as a compound form is problematic.

One statement that can be made with some certitude is that starting from # /650/ up to # /676/, most or the very most of these glyphs appear to be variants

of # /670/  $^{\circ}$  This observation concerns the measurable consistency of /670/ across the corpus.  $^{81}$ 

Having gone this far, the synthesis of the data suggests the "*L-T*" glyph corresponds to a discrete form. Although a *bona fide* RR glyph, it stands for a minimal inscription in the actual state. S. R. Fischer defines a valid *rongorongo* inscription for the purposes of his study as follows: "*Inscription' here signifies an object bearing a sequence of two or more glyphs that fulfil a communicatory function*".<sup>82</sup> This, as Fischer himself admits, is an overly restrictive definition. He correctly notes that "*the pre-missionary Rapanui's use of even isolated* rongorongo *glyphs evidently also satisfied some sort of communicatory need*".<sup>83</sup> Fischer includes in his monograph a short chapter titled "*Other Inscriptions*" in which are briefly discussed single and compound *rongorongo* glyphs found on: (a) wooden statuettes<sup>85</sup> and other wooden objects; (b) RR-like glyphs included in the variety of Rapa Nui tattoo designs; (c) RR-like glyphs engraved

<sup>&</sup>lt;sup>79</sup> cf. MELKA, T. S. *Palindrome-like Structures in the* rongorongo *Script*, p. 163. On the /400/-series, see BARTHEL, T. S. *Grundlagen...*, pp. 132–136; and GUY, J. B. M. *General Properties of the* Rongorongo *Writing*, p. 55: "*Series 400 to 499*: *Glyphs with the head of series 300*, *but with miscellaneous body shapes*". On the /600/-series, see BARTHEL, T. S. *Grundlagen...*, pp. 142–146, and GUY, J. B. M. *General Properties of the* Rongorongo *Writing*, p. 56: "*Series 600 to 699*: *Ornithomorphic glyphs*".

<sup>&</sup>lt;sup>80</sup> In this sense, see also the allomorphic sequences Ev3 • Sa1 • Gr2/3 • Kr3 • Cb2 (= Cv2) • Ra6 • Ab4, described in POZDNIAKOV, K. Les Bases du Déchiffrement de l'Écriture de l'Île de Pâques, p. 295, Fig. 3.

<sup>81</sup> cf. BARTHEL, T. S. *Grundlagen...*, pp. 144–145.

<sup>82</sup> FISCHER, S. R. Rongorongo..., p. ix.

<sup>&</sup>lt;sup>83</sup> Ibid., p. 543.

<sup>&</sup>lt;sup>84</sup> Ibid., Chapter 43, pp. 543–551.

<sup>&</sup>lt;sup>85</sup> See DEDEREN, F. Corpus Rapa Nui. Inventaire Mondial de la Statuaire en Bois de l'île de Pâques, for a partial catalog of engravings found on the heads of various statuettes, such as moai tangata, moai kavakava, moai papa (= moai pa'apa'a, moai pakapaka), and so forth.

on human skulls;<sup>86</sup> and (d) RR-like glyphs found in the corpus of Easter Island rock art (specifically *pukao* [stone "headdresses" / "crowns" that were placed on some, but not all, *moai*] and petroglyphs).<sup>87</sup> Regarding such "other inscriptions", Fischer astutely comments, "Unfortunately, there exists no catalogue of such artefacts bearing one or more rongorongo glyphs. The compilation of this catalogue is an important task that awaits future investigators".<sup>88</sup>

Documentation of the "*L*–*T*" glyph will ultimately contribute to the catalog of artifacts bearing *rongorongo* glyphs that Fischer envisions. Furthermore, if we tentatively accept the hypothesis that the original artifact, which the "*Lutz–Terasaki* fragment" is the remains of, was some kind of weapon (whether staff, club, or obsidian-tipped knife, spear, or other weapon) used either in actual warfare, ritual combat, or possibly in rituals involving the sacrifice of human victims to the gods and cannibalism.<sup>89</sup> then the possible connection of glyph

<sup>&</sup>lt;sup>86</sup> HOUGH, W. Notes on the Archeology and Ethnology of Easter Island, p. 883, Fig. 6; OWSLEY, D. W., SIMON, V. E., BARCA, K. G., et al. Demographic Analysis of Modified Crania from Rapa Nui, pp. 263–265. On a different note, see also McCALL, G. The End of the World at the End of the Earth: Retrospective Eschatology on Rapanui (Easter Island), concerning the story of Hotu Matu'a's skull, "with its elaborate carvings and large size".

<sup>&</sup>lt;sup>87</sup> See LEE, G. The Rock Art of Easter Island: Symbols of Power, Prayers to the Gods for an introduction to the catalog of Easter Island petroglyphs, Relatable information is found in HARRISON, J. P. The Hieroglyphics of Easter Island, With Plates xx and xxi, p. 371; LEHMANN, W. Essai d'une Monographie Bibliographique sur l'Île de Pâques, p. 261; BALFOUR, H. Some Ethnological Suggestions in regard to Easter Island, or Rapanui, pp. 369-371; LAVACHERY, H. Les Pétroglyphes de l'Ile de Pâques; MACRI, M. J. RongoRongo of Easter Island, p. 184, Figure 19; WIECZOREK, R. M. Naming the rongorongo Artifacts; LEE, G., et al. Secondary Applications of Rock Art at Coastal Sites of Easter Island (Rapa Nui), pp. 166-168; Figure 17; MELKA, T. S. A Developmental Continuum for the rongorongo Script of Easter Island, Part I; HIXON, S. W., LIPO, C. P., McMORRAN, B., HUNT, T. L. The Colossal Hats (pukao) of Monumental Statues on Rapa Nui (Easter Island, Chile): Analyses of pukao Variability, Transport, and Emplacement, p. 152. Furthermore, MORENO ROA, H. Geological Outline of Easter Island and Petrographico-Structural Features of its Lithic Monuments, p. 257, in commenting on the pukao, known alternatively to us as headdresses • topknots, reveals the following detail: "The pyroclastic rock density was estimated to be about 1.5 g/cm3, hence, the weights of the pukao vary from about 9 up to 20 tons".

<sup>88</sup> FISCHER, S. R. Rongorongo..., p. 544.

<sup>&</sup>lt;sup>89</sup> See EDWARDS, E., EDWARDS, A. When the Universe was an Island: Exploring the Cultural and Spiritual Cosmos of Ancient Rapa Nui, pp. 275–276.

/670/ and its variants (including the "L–T" glyph) with "slumber" and hence "death" in some contexts (see subsections *Possible Meaning and Context of the Incised Glyph* and *Hypotheses* in the second part of the article), makes sense. Its presence on a hand-weapon or a ceremonial warlike artifact provides a meaningful context for the "L–T" glyph. Indeed, it may have been seen as a magical symbol that imbued the artifact upon which it was inscribed with supernatural power, with extra *mana*. 90

### **The Original Presumed Artifact**

Having a small cut off piece of wood at hand ( $\rightarrow$  the "L–T fragment"), it is natural to wonder about its full shape and function in the pre-missionary times.

In order to identify it with certain accuracy, clues from different sources are brought together; that is, whatever available and tangible evidence is within reach. Expectedly, a few points will be less obvious, while other initial assumptions could yield a more re-constructible reality.

#### **Wood Species and Patina**

Unfortunately, we cannot say at this time with any degree of certainty what species of hardwood the "*Lutz–Terasaki* fragment" is composed of. Detailed botanical analysis would require removing a sample of wood. Given the small size of the fragment, such destructive activity is not permissible or advisable at present, 91 particularly in light of the fact that such sampling may not necessarily

<sup>&</sup>lt;sup>90</sup> cf. e.g., KOSKINEN, A. A. Linking of Symbols: Polynesian Patterns II, pp. 102–105; SHORE, B. Mana and Tapu.

<sup>&</sup>lt;sup>91</sup> The practice is not unheard of: BETTOCCHI, L. Antigua Escritura rongorongo de la Isla de Pascua: Los Prestigiosos Objetos del Museo Nacional de Historia Natural de Santiago de Chile [The Ancient rongorongo Writing of Easter Island: The Prestigious Artifacts of "Museo Nacional de Historia Natural", Santiago de Chile], p. 23, speaking of the "Small Santiago Tablet", comments, "Hasta hoy no se ha permitido extraer un pedacito de madera y no hay entonces análisis ni datación. Su tamaño es: 32,5 × 12,1 × 2 cm" [As of this date, it has not been consented the extraction of a small piece of wood, hence neither a (xylological; our note) analysis nor a (chronological; our note) dating exist. Its size is: 32,5 × 12,1 × 2 cm]. We may wish to mention here an early assessment of the said tablet, reported in HARRISON, J. P. The Hieroglyphics of Easter Island, With Plates xx and xxi, p. 372: "The smaller and the more perfect one [= the "Small Santiago Tablet"] measures fourteen inches in length, by from 4¾ to 5 inches in

result in a definitive identification of the species. On top of that, naming the wood species would neither prove nor disprove its authenticity as a genuine Easter Island artifact. As Catherine Orliac has pointed out, [...] we know that driftwood was very much appreciated [by the Rapanui; our note] and that, in consequence, ancient works of art could be carved in woods of different geographical origin [...]. Indeed, wood in general, and certain species in particular, was held sacred. Pieces of driftwood washed-up onto the island's shoreline may have been considered gifts from the gods.

The above being said, upon close inspection of the "Lutz-Terasaki fragment" and comparing it to various pre-missionary and early missionary period artifacts that one of us (RMS) has had the opportunity to view or inspect first-hand in museums and private collections, our best estimate is that the "Lutz-Terasaki fragment" is carved from Thespesia populnea (Malvaceae). Commonly referred to as Pacific rosewood or the rosewood of Oceania, 94 this tree and its wood was referred to on Easter Island as makoi (= mako'i). 95 If indeed the "Lutz-Terasaki fragment" is composed of makoi, this is not at all unexpected. In a study of 200 wooden artifacts from Easter Island, Catherine Orliac on Easter Island in pre-missionary times, was greatly valued as a wood for carving, and was apparently considered sacred on Easter Island as it

breadth, and is about one inch thick  $[=35.56 \times 10.16-12.7 \times \text{ca.} 2.54 \text{ cm}]$ ". Furthermore, in comparing the "Lutz-Terasaki fragment" (=3.7 cm by 3.4 cm by 2.5 cm) to the bigger size of the "Small Santiago Tablet", the current refusal seems a justified precaution.

<sup>&</sup>lt;sup>92</sup> The case of the genuine tablet "*Tahua*" with its stylized glyphs carved on a European ash-wood (*Fraxinus* sp.) oar may be regarded here. The wood species may hint at best at the time depth of the inscription. Conversely, several RR tablets carved on *Thespesia populnea* (see ORLIAC, C. *Botanical Identification of 200 Easter Island Wood Carvings*, p. 133, Table 8), aside from authenticity, seem to have a more direct tone in matters of age if we consider the patina and the indigenousness of the material.

<sup>93</sup> ORLIAC, C. Types of wood Used in Rapanui Carving, p. 204.

<sup>&</sup>lt;sup>94</sup> Among other names, see FRIDAY, J. B., OKANO, D. Thespesia populnea (milo). Malvaceae (mallow family); cf. also ORLIAC, C. Botanical Identification of 200 Easter Island Wood Carvings; PÉTARD, P. Plantes utiles de Polynésie française et Raau Tahiti.

<sup>&</sup>lt;sup>95</sup> See ENGLERT, S. La Tierra de Hotu Matu'a: Historia, Etnología y Lengua de la Isla de Pascua [The Land of Hotu Matu'a: History, Ethnology, and Language of Easter Island], p. 467; FUENTES, J. Diccionario y Gramática de la Lengua de la Isla de Pascua. Pascuense—Castellano, Castellano—Pascuense. Dictionary & Grammar of the Easter Island Language. Pascuense—English, English—Pascuense, p. 779.

<sup>&</sup>lt;sup>96</sup> ORLIAC, C. Botanical Identification of 200 Easter Island Wood Carving.

was elsewhere in Polynesia. <sup>97</sup> Based on Catherine Orliac's analyses, *mako'i* was used for a wide variety of carvings, including *rongorongo* tablets, *rei miro*, *tahonga*, and perhaps most pertinent to consideration of the "*Lutz–Terasaki* fragment", some *ua* staffs. Of the eighteen (18) *ua* staffs that Orliac analyzed in all, <sup>98</sup> nine (9) were composed of toromiro (*Sophora toromiro*, indigenous to Easter Island), <sup>99</sup> three (3) were *mako'i*, one (1) was of *Robinia* sp., and five (5) were of uncertain wood (foreign wood or driftwood [?]).

When attempting to determine the authenticity of an Easter Island wooden artifact – that is, whether it is a genuine pre-missionary or early missionary piece, or of later manufacture – more important than the taxonomic identity of wood is the analysis of other factors. In this regard, Catherine Orliac 100 has pointed out, "Numerous parameters must be taken into consideration, such as stylistic criteria, the state of the object's surface, its polish [...]". 101 Perhaps the most important factor for establishing the authenticity of the antiquity of a wooden artifact is the state of its surface patina.

Studying the "*Lutz–Terasaki* fragment" carefully, the surface patina, polish, and wear are evidently quite old. The patina covers over and fills in the lines of the engraving of the glyph. <sup>102</sup> It appears that the glyph itself is quite ancient and either original to the artifact, or was etched / engraved onto the artifact a very long time ago. The glyph on the "*Lutz–Terasaki* fragment" appears to be much older than, for instance, the pseudo-*rongorongo* glyphs<sup>103</sup> found on the *rei miro* 

<sup>&</sup>lt;sup>97</sup> Ibid., p. 136.

<sup>98</sup> Ibid.

<sup>&</sup>lt;sup>99</sup> For more, see ZIZKA, G. Changes in the Easter Island Flora: Comments on Selected Families, pp. 191–192; ESPEJO, J., RODRÍGUEZ, R. Antecedentes Históricos en la Descripción y del Uso de Sophora toromiro (Phil.) Skottsb. (Fabaceae) en su Hábitat Natural: 1770 – 1948 [Historical Description and Use of Sophora toromiro (Phil.) Skottsb. (Fabaceae) in the Wild: 1770 – 1948]; PÜSCHEL, T. A., ESPEJO, J., SANZANA, M-J., BENÍTEZ, H. A. Analysing the Floral Elements of the Lost Tree of Easter Island: A Morphometric Comparison between the Remaining Ex-Situ Lines of the Endemic Extinct Species Sophora toromiro, and cross-references therein.

<sup>&</sup>lt;sup>100</sup> ORLIAC, C. Types of Wood Used in Rapanui Carving, pp. 204–205.

<sup>&</sup>lt;sup>101</sup> See, in a parallel context (= the "San Diego Tablet"), MELKA, T. S., SCHOCH, R. M. Exploring a Mysterious Tablet from Easter Island: The Issues of Authenticity and Falsifiability in rongorongo Studies, p. 495.

<sup>&</sup>lt;sup>102</sup> For a general description of the carving processes, see DEDEREN, F., FISCHER, S. R. *The Traditional Production of the Rapanui Tablets*, pp. 182–183.

Another imitative piece seems to be the self-styled "Lateran Tablet" (cf. MÉTRAUX, A. Two Easter Island Tablets in Bernice Pauahi Bishop Museum, Honolulu, p. 1; Ethnology of Easter Island, p. 392; BARTHEL, T. S. Grundlagen..., p. 34). Commenting on this tablet made of an apple-tree wood (Pyrus malus),

collected by the German paymaster candidate J. Weißer in September 1882.  $^{104}$  In his monograph, Fischer suggests that these pseudo-rongorongo glyphs were added in the early 1880s, in order to "enhance" its commercial value.  $^{105}$  Earlier, the same author provided the following under the section "Indeterminate or Spurious" artifacts: "RR a "Sydney rei miro" Australian Museum 18853, Sydney; wood unknown,  $32 \times 9$  [cm], ca. 17 glyphs (neither classical nor ta'u but ornamental) later scratched upon 'ariki Hangeto's original rei miro, perhaps in 1882 when Salmon gave this to Weisser".  $^{106}$ 

Based on close inspection of photos of the Weißer / Sydney *rei miro*, <sup>107</sup> the circa 1880s glyphs on it are evidently etched through the older patina, whereas on the "*Lutz–Terasaki* fragment" the well-developed patina covers over the glyph. The patina on the "*Lutz–Terasaki* fragment" appears to us to be as deep or deeper and better developed than on some well-documented pre-missionary

LAVACHERY, H. Le Bois Employés dans l'Île de Pâques, p. 71, argued that "[...] les caractères qu'elle porte sont dégénères. A première vue, cette tablette semble une imitation des tablettes anciennes faite par un ignorant" [(...) the incised signs are degenerate. At first sight, this tablet seems an imitation of ancient tablets made by an ignoramus]. MÉTRAUX, A. Ethnology of Easter Island, called it, in turn, "[...] a crude fake"; BUTINOV, N. A., KNOROZOV, Y. V. Preliminary Report on the Study of the Written Language of Easter Island, p. 7, consider "The tablet kept in Rome" together with "the rei-miro kept in Sydney", as "evidently false"; VAN HOOREBEECK, A. La Vérité sur l'ile de Pâques, p. 257, referring to a dated note on the rei miro of Sydney signed by Weisser (23-9-[18]82): "Ces quelques précisions historiques n'enlèvent rien au fait que cette pièce, quoique jolie, soit un faux" [Some historical specifications do not rescind at all the fact that this piece, handsome as it is, may be a fake (inscription; our note)]; FISCHER, S. R. A Provisional Inventory of the Inscribed Artifacts in the Three Rapanui Scripts, p. 180, includes it in the artifacts displaying the later mama script: "M 2 "Lateran 3449" Formerly Monumenti Musei e Gallerie Pontificie 3449 (<6442), Città de Vaticano, Rome; apple wood (Malus), 64 × 1.5 [cm]; probably carved in Chile in 1920s".

104 cf. LEHMANN, W. Essai d'une Monographie Bibliographique sur l'Île de Pâques, p. 148, footnote 10; OYARZÚN, A. Toromiros de la Isla de Pascua [Toromiro artifacts from Easter Island], pp. 135–136; MÉTRAUX, A. Two Easter Island Tablets in Bernice Pauahi Bishop Museum, Honolulu, p. 1; BARTHEL, T. S. Grundlagen..., pp. 33–34; GEISELER, W. (Kapitänlieutenant). Geiseler's Easter Island Report: An 1880s Anthropological Account, p. 57, Figure 25, for the original drawing.

<sup>&</sup>lt;sup>105</sup> FISCHER, S. R. *Rongorongo...*, pp. 510–511.

<sup>&</sup>lt;sup>106</sup> FISCHER, S. R. A Provisional Inventory of the Inscribed Artifacts in the Three Rapanui Scripts, p. 178.

<sup>&</sup>lt;sup>107</sup> Such as published in FORMENT, F., ESEN-BAUR, H-M. (eds.). *L'Île de Pâques*: *Une Énigme*?, p. 208.

pieces from Easter Island.<sup>108</sup> Of course, one could argue that such observations are "subjective", but they are routinely applied as an age-determining factor and we believe (they) should be seriously considered. A genuine, deep, and fine patina does not develop "overnight".

This article continues in the next issue of *Asian and African Studies*, in which a number of hypotheses – regarding the possible meaning and context of the "*Lutz–Terasaki* fragment" glyph – are offered. Crucial to our analyses, we also disclose a selection of photographs that illustrate various pre- and post-missionary indigenous artifacts – mostly unpublished to date. The second part ends with our *Concluding Remarks*, to be considered as a pause for thought by any concerned scholarly party.

#### REFERENCES

- ALTMANN, Gabriel, ČECH, Radek, MAČUTEK, Ján, UHLIŘOVÁ, Ludmila (eds.). Empirical Approaches to Text and Language Analysis, Dedicated to Luděk Hřebiček on the Occasion of his 80th Birthday (Studies in Quantitative Linguistics, 17). Lüdenscheid, Germany: RAM-Verlag, 2014.
- ÁVILA FUENTEALBA, Franklin. *Ensayo de Estudio Visual de las Tablillas* rongorongo [(An) Essay of Visual Study of the *rongorongo* Tablets], 2007. Temuco, Chile [online] [cit. 1 February 2020]. Available from http://www.serindigena.org/archivosdigitales/otros/ensayo rongorongo de tocariov.pdf
- BALFOUR, Henry. Some Ethnological Suggestions in regard to Easter Island, or Rapanui. In *Folklore*, 1917, Vol. 28, No. 4, pp. 356–381. https://doi.org/10.1080/0015587X.1917.9719007
- BARTHEL, Thomas S. Resultados Preliminares del Desciframiento de las *Kohau-rongorongo* de la Isla de Pascua [Preliminary Results of the Decipherment of Easter Island's *Kohau-rongorongo*]. In *Runa*, *Archivo para las Ciencias del Hombre* (Buenos Aires), 1956, Vol. 7, pp. 233–241.
- BARTHEL, Thomas S. *Grundlagen zur Entzifferung der Osterinselschrift*. (Abhandlungen aus dem Gebiet der Auslandskunde 64, Reihe B). Hamburg: Cram, de Gruyter & Co., 1958.
- BARTHEL, Thomas S. *Rongorongo-Studien* (Forschungen und Fortschritte bei der Weiteren Entzifferung der Osterinselschrift). In *Anthropos* (Published by Nomos Verlagsgesellschaft mbH), 1963, Vol. 58, Nos. 3–4, pp. 372–436

<sup>&</sup>lt;sup>108</sup> See, for instance, KAEPPLER, A. L. Sculptures of Barkcloth and Wood from Rapa Nui: Symbolic Continuities and Polynesian Affinities.

- [online] [cit. 1 February 2020]. Available from https://www.jstor.org/ stable/40455963.
- BATISTA CAMPBELL, Ramón. *La Herencia Musical de Rapanui*: *Etnomusicología de la Isla de Pascua* [The Musical Legacy of Rapanui: Ethnomusicology of Easter Island]. Santiago de Chile: Editorial Andrés Bello, 1971.
- BETTOCCHI, Lorena. *Antigua Escritura* rongorongo *de la Isla de Pascua*: *Los Prestigiosos Objetos del Museo Nacional de Historia Natural de Santiago de Chile* [The Ancient *rongorongo* Writing of Easter Island: The Prestigious Artifacts of "Museo Nacional de Historia Natural", Santiago de Chile], 2009, pp. 1–35 [online] [cit. 18 September 2019]. Available from http://www.isla-de-pascua.com/RR%20%20MNHN%20DE%20SANTIAGO-ARCHIVUM.pdf.
- BIANCO, Jean. Thomas Barthel et le Déchiffrement de l'Écriture Pascuane (1ère partie). In *Kadath* (Brussels), 1976, Vol. 20, pp. 13–21.
- BLIXEN, Olaf. La Oclusión Glótica del Pascuence y Algunas Observaciones sobre la Posición del Pascuence dentro del Grupo de Lenguas Polinésicas [The Glottal Stop in Rapanui Speech and Some Observations regarding the Position of Rapanui in the Group of Polynesian Languages]. In *Moana: Estudios de Antropología Oceánica* (Montevideo), 1972, Vol. 1, No. 5, pp. 1–20.
- BROSIUS, M. (ed.). Ancient Archives and Archival Traditions: Concepts of Record-keeping in the Ancient World. Oxford Studies in Ancient Documents. Oxford: Oxford University Press, 2003.
- BUTINOV, Nikolai A., KNOROZOV, Yuri V. Preliminary Report on the Study of the Written Language of Easter Island. In *Journal of the Polynesian Society*, 1957 [1956], Vol. 66, No. 1, pp. 5–17.
- CEIPP (Centre [formerly Cercle] d'Études sur l'Île de Pâques et la Polynésie). *The Rongorongo of Easter Island*, 2005 [online] [cit. 22 April 2008]. Available from http://www.rongorongo.org.
- CHAUVET, Charles-Stéphen. *L'Île de Pâques et Ses Mystères*. In McLAUGHLIN, Shawn (ed.). Translated by ALTMANN, Ann M. Paris: Éditions "TEL", 1935 [online] [cit. 20 November 2019]. Available from http://www.chauvet-translation.com/index.htm.
- DALTON, Ormonde Maddock. On an Inscribed Wooden Tablet from Easter Island (Rapa Nui) in the British Museum. In *Man* (*The Anthropological Institute of Great Britain and Ireland*), 1904, Vol. 4, No. 1, pp. 1–7.
- DANIELS, Peter T., BRIGHT, William (eds.). *The World's Writing Systems*. Oxford, N.Y.: Oxford University Press, 1996.
- DEDEREN, François, FISCHER, Steven Roger. The Traditional Production of the Rapanui Tablets. In FISCHER, Steven Roger (ed.). *Easter Island*

- Studies: Contributions to the History of Rapanui in Memory of William T. Mulloy. Oxford, UK: Oxbow Monograph 32, 1993. pp. 182–184.
- DEDEREN, François. Corpus Rapa Nui. Inventaire Mondial de la Statuaire en Bois de l'île de Pâques / Corpus Rapa Nui: Global Inventory of the Wooden Statuary of Easter Island. Braine-L'Alleud, Belgium: François Dederen / DCL Printers, 2013.
- DE LONGPÉRIER, Adrien Prévost. Inscriptions Polynésiennes. In *Comptes Rendus des Séances de l'Académie des Inscriptions et Belles-Lettres* (Paris, Imprimerie Nationale), 1873, Quatrième Série, Tome I, pp. 151–155 [online] [cit. 18 March 2021]. Available from https://www.persee.fr/doc/crai\_0065-05361873\_num\_17\_1\_68024.
- DUDA, R. O., HART, P. E., and STORK, D. G. *Pattern Classification*. New York: John Wiley & Sons (USA), 2nd edition, 2001.
- DU FEU, Veronica. *Rapa Nui (Descriptive Grammars)*. London and New York: Routledge, 1996.
- DUHOUX, Yves. Interpreting the Linear B Records: Some Guidelines. In DUHOUX, Yves, MORPURGO DAVIES, Anna (eds.). *A Companion to Linear B: Mycenaean Greek Texts and their World*. Volume 2. Louvain-la-Neuve, Belgium / Walpole, MA: Peeters, 2011. pp. 1–32.
- DURANTON, Raymond. Encoding and Imaging the *Rongorongo* Corpus (A Collective Work of the Cercle d'Études sur l'Île de Pâques et la Polynésie (CEIPP) Paris, France). In STEVENSON, Christopher M., LEE, Georgia, MORIN, Frank J. (eds.). *Easter Island in Pacific Context South Seas Symposium: Proceedings of the Fourth International Conference on Easter Island and East Polynesia, University of New Mexico, Albuquerque*, 5 10 *August 1997*. Los Osos, California: Bearsville and Cloud Mountain Presses (The Easter Island Foundation), 1998. pp. 42–48.
- EDWARDS, Edmundo, EDWARDS, Alexandra. When the Universe was an Island: Exploring the Cultural and Spiritual Cosmos of Ancient Rapa Nui. Hangaroa, Easter Island: Hangaroa Press, 2013.
- EISLER, Colin T. *Master of the Unicorn: The Life and Work of Jean Duvet.* 2nd ed. New York: Abaris Books, 1979.
- ENGLERT, Sebastian. La Tierra de Hotu Matu'a: Historia, Etnología y Lengua de la Isla de Pascua. [The Land of Hotu Matu'a: History, Ethnology, and Language of Easter Island]. Santiago de Chile: Padre las Casas, 1948.
- ENGLUND, Robert K. The State of Decipherment of Proto-Elamite. In HOUSTON, Stephen D. (ed.). *The First Writing: Script Invention as History and Process*. Cambridge University Press: Cambridge, UK, 2004. pp. 100–149.
- ESEN-BAUR, Heide-Margaret. *Untersuchungen über den Vogelman-Kult auf der Osterinsel* [Investigations on the "Birdman" Cult in Easter Island].

- (Arbeiten aus dem Seminar für Völkerkunde der Johann Wolfgang Goethe-Universität Frankfurt am Main, 14). Wiesbaden: Franz Steiner Verlag, 1983.
- ESPEJO, Jaime, RODRÍGUEZ Roberto. Antecedentes Históricos en la Descripción y del Uso de *Sophora toromiro* (Phil.) Skottsb. (Fabaceae) en su Hábitat Natural: 1770 1948 [Historical Description and Use of *Sophora toromiro* (Phil.) Skottsb. (Fabaceae) in the Wild: 1770 1948]. In *Gayana Bot.*, 2013, Vol. 70, No. 2, pp. 383–389.
- EYRAUD, Joseph-Eugène. Lettre du Frère Eugène Eyraud, au T. R. P. Supérieur Général de la Congrégation des Sacrés-Cœurs de Jésus et de Marie. Valparaíso, décembre 1864. In Annales de la Propagation de la Foi Recueil Périodique des Lettres des Evêques et des Missionnaires des Missions des Deux Mondes, et de tous les Documents Relatifs aux Missions et a l'Œuvre de la Propagation de la Foi (Lyon, chez l'Éditeur des Annales), 1866, Vol. 38, pp. 52–71, 124–138.
- FEDOROVA, Irina K. *About One Glyph of* kohau rongorongo. In *Rapa Nui Journal*, December 1997, Vol. 11, No. 4, pp. 152–153.
- FISCHER, Steven Roger (ed.). Easter Island Studies: Contributions to the History of Rapanui in Memory of William T. Mulloy. Oxford, UK: Oxbow Monograph 32, 1993.
- FISCHER, Steven R. A Provisional Inventory of the Inscribed Artifacts in the Three Rapanui Scripts. In FISCHER, Steven R. (ed.). *Easter Island Studies: Contributions to the History of Rapanui in Memory of William T. Mulloy*. Oxbow Monograph 32. Oxford, Great Britain: Oxbow Books / The Short Run Press, 1993. pp. 177–181.
- FISCHER, Steven R. Preliminary Evidence for Cosmogonic Texts in Rapanui's *Rongorongo* Inscriptions. In *Journal of the Polynesian Society*, 1995, Vol. 104, pp. 303–321.
- FISCHER, Steven R. Rongorongo: *The Easter Island Script*, *History*, *Traditions*, *Texts*. Oxford: Oxford University Press, 1997.
- FORMENT, Francina, ESEN-BAUR, Heide-Margaret (eds.). *L'Île de Pâques*: *Une Énigme*? Bruxelles: Musées Royaux d'Art et d'Histoire / Frankfurt am Main: Verlag Philipp von Zabern, 1990.
- FRIDAY, J. B., OKANO, Dana. *Thespesia populnea* (milo). *Malvaceae* (mallow family). In *Species Profiles for Pacific Island Agroforestry*. April 2006. ver. 2.1 [online] [cit. 17 March 2018]. Available from http://www.tra ditionaltree.org.
- FUENTES, Jordi. *Diccionario y Gramática de la Lengua de la Isla de Pascua*. Pascuense–Castellano, Castellano–Pascuense. *Dictionary & Grammar of the Easter Island Language*. Pascuense–English, English–Pascuense. Santiago de Chile: Editorial Andrés Bello, 1960.

- GEISELER, Wilhelm (Kapitänlieutenant). Die Oster-Insel (Eine Stätte prähistorischer Kultur in der Sudsee). Geiseler's Easter Island Report: An 1880s Anthropological Account. With an Introduction, Annotations and Notes, by AYRES, William S. Translated by AYRES, William S., AYRES, Gabriella S. Asian and Pacific Archaeology series, no. 12. Honolulu: University of Hawai'i at Manoa, 1995 [1883].
- GELB, Ignace J. A Study of Writing (2nd ed.). Chicago, IL: University of Chicago Press, 1963 [1952].
- GUIART, Jean. Problems of Methods in Interpreting Easter Island Data. In ESEN-BAUR, Heide-Margaret, ZIEGLER, Willi (eds.). State and Perspectives of Scientific Research in Easter Island Culture, Courier Forschungsinstitute Senckeberg 125. Frankfurt am Main: Senckebergische Naturforschende Gesellschaft, 1990. pp. 113–114.
- GUY, Jacques B. M. On a Fragment of the "Tahua" Tablet. In Journal of the Polynesian Society, 1985, Vol. 94, pp. 367–387.
- GUY, Jacques B. M. Some Observations Drawn from the Putative Genealogy of Tablet G. In *Rapa Nui Journal*, 2003, Vol. 17, No. 1, pp. 42–43.
- GUY, Jacques B. M. General Properties of the *Rongorongo* Writing. In *Rapa Nui Journal*, 2006, Vol. 20, No. 1, pp. 53–66.
- HABERLANDT, Michael. Über Schrifttafeln von der Osterinsel. In *Mitteilungen der Anthropologischen Gesellschaft in Wien*, 1886, Vol. 16, pp. 97–102.
- HAMMERTON, J. A. (ed.). *Wonders of the Past*. New Edition in Two Volumes. New York: Wise & Co. 1941 [1924].
- HARALAMBOUS, Yannis (ed.). *Graphemics in the 21st Century. Brest, June* 13 15, 2018. *Proceedings Grapholinguistics and Its Applications* (ISSN: 25345192), Vol. 1. Brest, France: Fluxus Editions, 2019.
- HARRIS, Martyn. *Shared Sequences* (*Ngrams / Bigrams*) [*Texts*] Da Db Er Ev Gv Ia Na Nb Ta, 2009. MS-Excel Document in the Collection of TSM.
- HARRIS, Martyn. *An Evaluation of LSA Methods to the Retrieval of Genre and Glyph-to-Glyph Similarity in the* rongorongo *Inscriptions*. Poster Presentation at the 3rd Bloomsbury Student Conference in Applied Linguistics, 2010 [online] [cit. 3 April 2019]. Available from https://www.academia.edu/384132/Analysis\_of\_literary\_genre\_in\_the\_Rongorongo\_inscriptions\_conference\_presentation.
- HARRIS, Martyn, MELKA, Tomi S. The *Rongorongo* Script: On a Listed Sequence in the *recto* [verso; repaired] of Tablet 'Mamari'. In Journal of Quantitative Linguistics, 2011a, Vol. 18, No. 2, pp. 122–173.

- HARRIS, Martyn, MELKA, Tomi S. The *Rongorongo* Script: On a Listed Sequence in the *recto* [verso; repaired] of Tablet 'Mamari'. In Journal of Quantitative Linguistics, Part II, 2011b, Vol. 18, No. 3, pp. 234–272.
- HARRISON, James Park. The Hieroglyphics of Easter Island, With Plates xx and xxi. In *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, 1874, Vol. 3, pp. 370–383.
- HARRISON, James Park. Note on Five Hieroglyphic Tablets from Easter Island. In *Journal of the Royal Anthropological Institute of Great Britain and Ireland* (London), 1876, Vol. 5, pp. 248–250.
- HEYERDAHL, Thor. *The Art of Easter Island*. Garden City, New York: Doubleday & Company, Inc., 1975.
- HIXON, Sean W., LIPO, Carl P., McMORRAN, Benjamin J., HUNT, Terry L. *The Colossal Hats* (pukao) *of Monumental Statues on Rapa Nui (Easter Island, Chile): Analyses of* pukao *Variability, Transport, and Emplacement*. In *Journal of Archaeological Science* (Elsevier Ltd.), 2018, Vol. 100, pp. 148–157. https://doi.org/10.1016/j.jas.2018.04.011
- HOOPER, Steven. *Pacific Encounters*: Art & Divinity in Polynesia 1760 1860. (Published to accompany the exhibition Pacific Encounters: Art & Divinity in Polynesia 1760 1860, Sainsbury Centre for Visual Arts, University of East Anglia, Norwich, 21 May 13 August 2006). London: The British Museum Press, 2006.
- HORLEY, Paul. Structural Analysis of *rongorongo* Inscriptions. In *Rapa Nui Journal*, 2007, Vol. 21, No. 1, pp. 25–32.
- HORLEY, Paul. *Rongorongo* Tablet Keiti. In *Rapa Nui Journal*, 2010a, Vol. 24, No. 1, pp. 45–56.
- HORLEY, Paul. Comparative Structural Analysis of *Rongorongo* Script and Rapa Nui Songs. In WALLIN, Paul, MARTINSSON-WALLIN, Helene (eds.). *The Gotland Papers: Selected Papers from the VII International Conference on Easter Island and the Pacific Migration, Identity, and Cultural Heritage, Gotland University, Sweden, August 20 25, 2007. Visby: Gotland University Press, 11, 2010b [2007]. pp. 217–224.*
- HORLEY, Paul, POZDNIAKOV, Konstantin. L'Écriture de l'Île de Pâques. In PIERRE, Aurélien, BLANQUER-MAUMONT, Anne, RAMIO, Céline (eds.). *L'Île de Pâques*. Arles: Actes Sud / Musée Champollion Les Écritures du Monde, FIGEAC Musée Fenaille, Rodez / Muséum d'Histoire Naturelle de Toulouse, 2018. pp. 80–93.
- HOUGH, Walter. Notes on the Archeology and Ethnology of Easter Island. In *The American Naturalist*, 1889, Vol. 23, No. 10, pp. 877–888 [online] [cit. 13 June 2019]. Available from https://www.journals.uchicago.edu/doi/pdfplus/10.1086/275019.

- HOWARD, Alan, BOROFSKY, Robert (eds.). *Developments in Polynesian Mythology*. Honolulu: University of Hawai'i Press, 1989.
- IMBELLONI, José. Las 'Tabletas Parlantes' de Pascua, Monumentos de un Sistema Gráfico Indo-oceánico [The 'Talking Tablets' of Easter Island, Monuments of an Indo-Oceanic Graphic System]. In *Runa*, *Archivo para las Ciencias del Hombre* (Buenos Aires), 1951, Vol. 4, No. 1–2, pp. 89–177.
- IMPEDOVO, Sebastiano, SIMON, Jean Claude (eds.). From Pixels to Features III: Frontiers in Handwriting Recognition. Amsterdam: North Holland, Elsevier Science Publishers B.V., 1992.
- JOYCE, T. A. The Mystery of the Easter Island Images. In HAMMERTON, J. A. (ed.). *Wonders of the Past*. New Edition in Two Volumes. New York: Wise & Co., 1941 [1924]. pp. 29–34.
- KAEPPLER, Adrienne L. Sculptures of Barkcloth and Wood from Rapa Nui: Symbolic Continuities and Polynesian Affinities. In *RES: Anthropology and Aesthetics*, 2003, Vol. 44, pp. 10–69.
- KOSKINEN, Arne A. *Linking of Symbols: Polynesian Patterns II*. Annales Societatis Missiologicae Fennicae XII. Helsinki, Finland: The Finnish Society for Missionary Research, 1967.
- LANDAUER, Thomas K., LAHAM, Darrell, and DERR, Marcia. From Paragraph to Graph: Latent Semantic Analysis for Information Visualization. In *Proceedings of the National Academy of Sciences* (PNAS), 2004, Vol. 101 (Suppl. 1), pp. 5214–5219 [online] [cit. 3 April 2019]. Available from https://www.pnas.org/content/101/suppl\_1/5214.
- LAVACHERY, Henri. Le Bois Employés dans l'Île de Pâques. În *Bulletin de la Société des Américanistes de Belgique* (Brussels), 1934, Vol. 11, pp. 67–71.
- LAVACHERY, Henri. Les Pétroglyphes de l'Île de Pâques. Antwerp: De Sikkel, 1939.
- LEE, Georgia. *The Rock Art of Easter Island: Symbols of Power, Prayers to the Gods.* Monumenta Archaeologica, Vol. 17. Los Angeles, California: UCLA Institute of Archaeology University of California Press, 1992.
- LEE, Georgia, HORLEY, Paul, BAHN, Paul, HAOA CARDINALI, Sonia, GONZÁLEZ NUALART, Lilian, CUADROS HUCKE, Ninoska. Secondary Applications of Rock Art at Coastal Sites of Easter Island (Rapa Nui). In *Almogaren* (Vienna, Austria), 2015 2016, Vols. 46–47, pp. 157–211.
- LEHMANN, Walter. Essai d'une Monographie Bibliographique sur l'Île de Pâques. Translated into French by R. P. Théophané CALMES (des Sacrés Cœurs de Picpus). In *Anthropos* (Salzburg), 1907, Vol. 2, pp. 141–151, 257–268 [online] [cit. 14 January 2020]. Available from https://www.digi-hub.de/viewer/image/DE-11-001852164/223/LOG 0061/.
- LEPROHON, Ronald J. *The Great Name: Ancient Egyptian Royal Titulary*. Writings from the Ancient World. LEWIS, Theodore J. (General ed.).

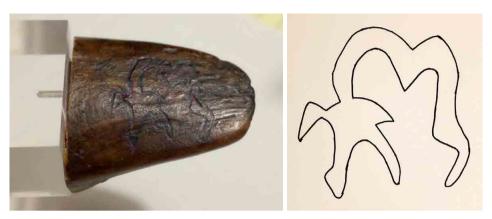
- Number 33. Atlanta: Society of Biblical Literature, 2013 [online] [cit. 2 April 2019]. Available from https://archive.org/stream/LEPROHON2013 TheGreatNameAncientEgyptianRoyalTitulary/LEPROHON\_2013\_The\_Great\_Name\_Ancient\_Egyptian\_Royal\_Titulary\_djvu.txt/
- LEVY, Noga, WOLF, Lior, DERSHOWITZ, Nachum, STOKES, Peter Anthony. Estimating the Distinctiveness of Graphemes and Allographs in Palaeographic Classification. In MEISTER, Jan Christoph, et al. (eds.). *DH2012 Book of Abstracts. Hamburg*, 2012, pp. 264–267 [online] [cit. 11 April 2019]. Available from https://www.cs.tau.ac.il/~wolf/papers/morphologicalanalysis.pdf.
- MACRI, Martha J. *RongoRongo* of Easter Island. In DANIELS, Peter T., BRIGHT, William (eds.). *The World's Writing Systems*. Oxford, N.Y.: Oxford University Press, 1996. pp. 183–188.
- MANNING, Christopher, PRABHAKAR, Raghavan, SCHÜTZE, Hinrich. *Introduction to Information Retrieval*. Cambridge, UK: Cambridge University Press, 2008.
- McCALL, Grant. The End of the World at the End of the Earth: Retrospective Eschatology on Rapanui (Easter Island). In JOB, Sebastian, CONNOR, Linda (eds.). Online Proceedings of the Symposium "Anthropology and the Ends of Worlds". Sydney Anthropology Symposium Series, 25 26 March 2010. Vol. 1. Sydney: University of Sydney, 2010. pp. 45–53 [online] [cit. 14 November 2019]. Available from http://anthroendsofworlds.word press.com.
- MELKA, Tomi S. Research Notes: "Santiago Staff" and "Honolulu Tablet 3629", 2004–2007. Manuscript in the Collection of TSM.
- MELKA, Tomi S. Structural Observations regarding *rongorongo* Tablet "*Keiti*". In *Cryptologia*, 2008, Vol. 32, No. 2, pp. 155–179.
- MELKA, Tomi S. The Corpus Problem in the *Rongorongo* Studies. In *Glottotheory: International Journal of Linguistics* (*Akademie-Verlag*, Berlin), 2009, Vol. 2, No. 1, pp. 111–136. https://doi.org/10.1515/glot-2009-0010.
- MELKA, Tomi S. "Harmonic"-like Sequences in the *rongorongo* Script. In *Glottotheory*: *International Journal of Linguistics* (*Akademie-Verlag*, Berlin), 2013, Vol. 4, No. 2, pp. 115–139.
- MELKA, Tomi S. Palindrome-like Structures in the *rongorongo* Script. In ALTMANN, Gabriel, ČECH, Radek, MAČUTEK, Ján, UHLIŘOVÁ, Ludmila (eds.). *Empirical Approaches to Text and Language Analysis*, *Dedicated to Luděk Hřebiček on the Occasion of his 80th Birthday* (Studies in Quantitative Linguistics, 17). Lüdenscheid, Germany: RAM-Verlag, 2014. pp. 153–181.

- MELKA, Tomi S. A Developmental Continuum for the rongorongo Script of Easter Island, Part I, 2017. Manuscript in the Collection of TSM.
- MELKA, Tomi S., SCHOCH, Robert M. Exploring a Mysterious Tablet from Easter Island: The Issues of Authenticity and Falsifiability in *rongorongo* Studies. In *Cryptologia*, 2020, Vol. 44, No. 6, pp. 481–544. https://doi.org/10.1080/01611194.2019.1706065.
- MÉTRAUX, Alfred. Two Easter Island Tablets in Bernice Pauahi Bishop Museum, Honolulu. In *MAN*, *A Monthly Record of Anthropological Science*, January 1938, Vol. 38, pp. 1–16.
- MÉTRAUX, Alfred. *Ethnology of Easter Island*. Bernice P. Bishop Museum Bulletin 160. Honolulu: Bernice P. Bishop Museum Press, 1940.
- MORENO ROA, H. Geological Outline of Easter Island and Petrographico-Structural Features of its Lithic Monuments. In CHAROLA, A. Elena (Senior ed.), KOESTLER, Robert J., LOMBARDI, Gianni (Co-eds.). *Lavas and Volcanic Tuffs. Proceedings of the International Meeting Easter Island, Chile*, 25 31 October, 1990. Rome, Italy: ICCROM International Centre for the Study of the Preservation and Restoration of Cultural Property / Getty Grant Program, 1994 [1990]. pp. 253–258.
- MNHN, Santiago de Chile (Museo Nacional de Historia Natural, Santiago de Chile). *Tablilla de Madera con Escritura* [Wooden Tablet (Featuring) Writing (= "Small Santiago Tablet"; our note)], 2021 [online] [cit. 24 January 2021]. Available from https://sketchfab.com/3d-models/tablillarongo-rongo-1-090408c682e348a0ab00d904ae850628.
- ORLIAC, Catherine. Types of Wood Used in Rapanui Carving. In FISCHER, Steven R. (ed.). *Easter Island Studies: Contributions to the History of Rapanui in Memory of William T. Mulloy.* Oxbow Monograph 32. Oxford, Great Britain: Oxbow Books / The Short Run Press, 2003. pp. 201–206.
- ORLIAC, Catherine. Botanical Identification of 200 Easter Island Wood Carvings. In WALLIN, Paul, MARTINSSON-WALLIN, Helene (eds.). *The Gotland Papers: Selected Papers from the VII International Conference on Easter Island and the Pacific Migration, Identity, and Cultural Heritage, Gotland University, Sweden, August 20 25, 2007.* Visby: Gotland University Press, 11, 2010 [2007]. pp. 125–141.
- OWSLEY, Douglas W., SIMON, Vicki E., BARCA, Kathryn G., VAN TILBURG, Jo Anne, WHITMORE, Deidre. Demographic Analysis of Modified Crania from Rapa Nui. In STEFAN, Vincent H., GILL, George W. (eds.). *Skeletal Biology of the Ancient Rapanui (Easter Islanders*). Cambridge, UK: Cambridge University Press, 2016. pp. 253–268.
- OYARZÚN, Aureliano. *Toromiros* de la Isla de Pascua. [Toromiro *artifacts* from Easter Island]. In Revista Chilena de Historia Natural, 1921, Vol. 25, pp. 133–140.

- PALMER, John Linton. A Visit to Easter Island, or Rapa Nui, in 1868. In *The Journal of the Royal Geographical Society of London* (Published by Wiley on behalf of *The Royal Geographical Society with the Institute of British Geographers*), 1870, Vol. 40, pp. 167–181 [online] [cit. 26 November 2019]. Available from https://www.jstor.org/stable/pdf/1798641.pdf.
- PALMER, John Linton. On Some Tablets Found in Easter Island. In *Proceedings of the Literary and Philosophical Society of Liverpool*, 1876, Sixty-fifth session, Vol. 30, pp. 255–263.
- PARKINSON ZAMORA, Lois, KAUP, Monika (eds.). *Baroque New Worlds*: *Representation, Transculturation, Counterconquest.* Durham and London: Duke University Press, 2010.
- PARSONS, Lee Allen. *The Origins of Maya Art: Monumental Stone Sculpture of Kaminaljuyu, Guatemala, and the Southern Pacific Coast.* Studies in pre-Columbian Art & Archaeology Number Twenty-Eight. Washington DC: Dumbarton Oaks Research Library, Trustees for Harvard University, 1986 [online] [cit. 27 September 2019]. Available from https://www.jstor.org/stable/41263466.
- PÉTARD, P. Plantes Utiles de Polynésie Française et Raau Tahiti. Édition revue et augmentée par KOENIG, Denise et Robert, et illustrée par CORDONNIER, Gilles. Papeete, Tahiti: Éditions Haere Po no Tahiti, 2007 [1986].
- POZDNIAKOV, Konstantin. Les Bases du Déchiffrement de l'Écriture de l'Île de Pâques. In *Journal de la Société des Océanistes*, Vol. 103, No. 2, 1996, pp. 289–303.
- PROSKOURIAKOFF, Tatiana. *A Study of Classic Maya Sculpture*. Publication 593. Washington DC: Carnegie Institution of Washington, 1950 [online] [cit. 30 September 2019]. Available from http://www.mesoweb.com/publications/Proskouriakoff/Proskouriakoff.pdf.
- PÜSCHEL, Thomas A, ESPEJO, Jaime, SANZANA, María-José, BENÍTEZ, Hugo A. Analysing the Floral Elements of the Lost Tree of Easter Island: A Morphometric Comparison between the Remaining *Ex-Situ* Lines of the Endemic Extinct Species *Sophora toromiro*. In *PLoS ONE*, 2014, Vol. 9, No. 12, e115548 [online] [cit. 3 December 2019]. Available from https://doi.org/10.1371/journal.pone.0115548.
- RAMÍREZ ALIAGA, José Miguel, HUBER, Carlos. *Easter Island Rapa Nui*, *a Land of Rocky Dreams*. Santiago: Carlos Huber Schulz Alvimpress Impresores, 2000.
- ROBB, John E. The Archaeology of Symbols. In *Annual Review of Anthropology*, 1998, Vol. 27, pp. 329–346.

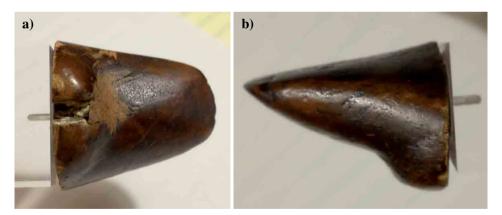
- ROBERTSON, John S. *The Possibility and Actuality of Writing*. In HOUSTON, Stephen D. (ed.). *The First Writing*: *Script Invention as History and Process*. Cambridge, UK: Cambridge University Press, 2004. pp. 16–38.
- ROGERS, Henry. Writing Systems. A Linguistic Approach. Malden, MA / Oxford, UK: Blackwell Publishing, 2005.
- ROUTLEDGE, Katherine (Mrs. SCORESBY ROUTLEDGE). *The Mystery of Easter Island. The Story of an Expedition*. London and Aylesbury: Hazell, Watson and Viney, LD, 1919.
- SASSOON, Rosemary, GAUR, Albertine. Signs, Symbols and Icons: pre-History to Computer Age. Exeter: Intellect, 1997.
- SCHOCH, Robert M., MELKA, Tomi S. The *Ranjitoki* (Rangitoki) Bark-Cloth Piece: A Newly Recognized *Rongorongo* Fragment from Easter Island. In *Asian and African Studies* (Bratislava), 2019, Vol. 28, No. 2, pp. 113–148 and 413–417 (Figures 1–7).
- SCHOCH, Robert M., MELKA, Tomi S. The *Ranjitoki* (Rangitoki) Fragment: Further Analysis of a Short *Rongorongo* Sequence on Bark-Cloth from Easter Island. In *Asian and African Studies* (Bratislava), 2020, Vol. 29, No. 1, pp. 26–41 and 113–118 (Figures 1–9).
- SCHOCH, Robert M., MELKA, Tomi S. A "Sacred Amulet from Easter Island —1885/6—": Analyzing Enigmatic Glyphic Characters in the Context of the rongorongo Script. In HARALAMBOUS, Y. (ed.). Grapholinguistics in the 21st Century 2020. Proceedings, Grapholinguistics and Its Applications. Brest, France: Fluxus Editions, Part II, Vol. 5, 2021. pp. 847—903. (Paper based on a conference poster session presented on 17 June 2020.) https://doi.org/10.36824/2020-graf-scho. [online] [cit. 9 January 2021]. Poster session available from http://www.fluxus-editions.fr/grafematik2020-files/schoch-slides.pdf.
- SHANNON, Claude E. Communication Theory of Secrecy Systems. In *Bell System Technical Journal*, 1949, Vol. 28, pp. 656–715 [online] [cit. 18 September 2019]. Available from http://pages.cs.wisc.edu/~rist/642-spring-2014/shannon-secrecy.pdf.
- SHORE, Bradd. *Mana* and *Tapu*. In HOWARD, Alan, BOROFSKY, Robert (eds.). *Developments in Polynesian Mythology*. Honolulu: University of Hawai'i Press, 1989. pp. 137–175.
- STEFAN, Vincent H., GILL, George W. (eds.). *Skeletal Biology of the Ancient Rapanui (Easter Islanders*). Cambridge, UK: Cambridge University Press, 2016.
- TEUBERT, Wolfgang, ČERMÁKOVÁ, Anna. *Corpus Linguistics: A Short Introduction*. London: Continuum / Athenaeum Press, 2007.
- TEULINGS, Hans Leo, SCHOMAKER, Lambert R. B. Unsupervised Learning of Prototype Allographs in Cursive Script Recognition. In IMPEDOVO,

- Sebastiano, SIMON, Jean Claude (eds.). *From Pixels to Features III: Frontiers in Handwriting Recognition*. Amsterdam: North Holland, Elsevier Science Publishers B.V., 1992. pp. 61–73.
- THOMSON, William Judah. *Te Pito te Henua, or Easter Island. Report of the United States National Museum for the Year Ending June 30, 1889.* (Annual Reports of the Smithsonian Institution for 1889). Washington D.C.: Smithsonian Institution, 1891. pp. 447–552.
- VAN HOOREBEECK, Albert. *La Vérité sur l'ile de Pâques*. Le Havre: Pierrette d'Antoine éditeur, 1979.
- VON BECKERATH, Jürgen. *Handbuch der ägyptischen Königsnamen*. Münchner Ägyptologischen Studien 20. Munich: Deutscher Kunstverlag, 1984.
- VON MACLAY, Nikolay Miklouho. Ueber die "Kohau rogo rogo" oder die Holztafeln von Rapa-Nui. In Zeitschrift der Gesellschaft fur Erdkunde zu Berlin, 1872, Vol. 7, pp. 79–81.
- WANG, Yifan. What Are We Calling "Latin Script"? Name and Reality in the Grammatological Terminology. In HARALAMBOUS, Yannis (Ed.). Graphemics in the 21st Century. Brest, June 13 15, 2018. Proceedings Grapholinguistics and Its Applications (ISSN: 25345192), Vol. 1. Brest, France: Fluxus Editions, 2019. pp. 91–109. doi: 10.36824/2018-graf-wang
- WIECZOREK, Rafał M. *Naming the* rongorongo *Artifacts*, 2013. Manuscript in the Collection of TSM.
- WIECZOREK, Rafał M., HORLEY, Paul. The Replicas of *rongorongo* Objects in the Musée du Quai Branly (Paris). In *Journal de la Société des Océanistes*, 2015, Vol. 140, No. 1, pp. 123–142.
- WIKIPEDIA. *Rongorongo* text G, 2019 [online] [cit. 26 March 2019]. Available from https://en.wikipedia.org/wiki/Rongorongo\_text\_G#/media/File:Rongorongo\_Gv2-7.jpg.
- WILDUNG, Dietrich. *Egyptian Saints: Deification in Pharaonic Egypt* (Hagop Kevorkian Series on Near Eastern Art and Civilization). New York: The New York University Press, 1977.
- ZIZKA, Georg. Changes in the Easter Island Flora: Comments on Selected Families. In ESEN-BAUR, Heide-Margaret, ZIEGLER, Willi (eds.). State and Perspectives of Scientific Research in Easter Island Culture, Courier Forschungsinstitute Senckeberg 125. Frankfurt am Main: Senckebergische Naturforschende Gesellschaft, 1990. pp. 189–207.



**Melka and Schoch, Fig. 1.** Frontal view ( $\Rightarrow$  "recto") of the "Lutz–Terasaki fragment", accommodating a "bird"-/"human"-like glyph. (© Photograph by R. M. Schoch, taken with the permission of the anonymous owner.) The drawing of the glyph is inserted rightwards for comparative purposes. The closest glyph-form to the "L–T" glyph in the canonical rongorongo corpus is attested on Gv4 ("Small Santiago Tablet,

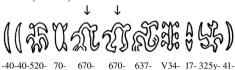
*verso*, line 4")  $\rightarrow$  The transparent acrylic stand is a modern addition.



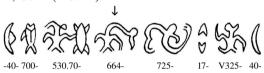
**Melka and Schoch. Figs. 2a, b.** The back (→ "verso") and side view (*left lateral*) of the "Lutz–Terasaki fragment" show a dark reddish patina consistent with its age. (© Photographs by R. M. Schoch, taken with the permission of the anonymous owner.)



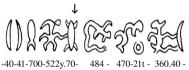
# 2 "*Mamari* Tablet", Ca9 (= Cr9)



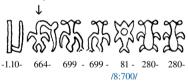
# 3 "*Mamari* Tablet", Cb14 (= Cv14)



#4 "Aruku Kurenga Tablet", Bv2



# 5 "Great St. Petersburg Tablet", Pr11



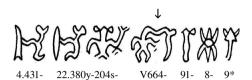
# 6 "Small St. Petersburg Tablet", Qv1-2



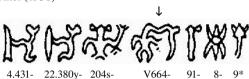
**Melka and Schoch, Fig. 3.** A choice of sequences features glyph /664/ and other scribal variants, which are marked via the pointer " $\downarrow$ ". Observe the slight intrasequence glyphic modifications, e.g.,  $Pr11 \leftrightarrow Qv1-2$ .

Segment from the recto of "Keiti Tablet", Er7

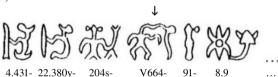
Barthel (1958)



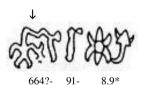
CEIPP (2005) after Barthel (1958)



Fischer (1997, p. 433)



Horley (2010a, p. 50)



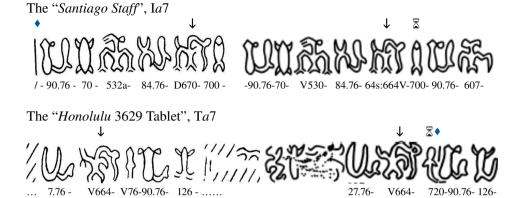
**Melka and Schoch, Fig. 4.** Tracings of a glyphic segment on Er7 by three authors; Horley's tracings of # /664/ would seem to be more in conformity with the original carving. The sign-group /4.431-22.380y/, designated "gamma 5 sequence" and suggested to be some kind of refrain by Barthel, is brought here for the broader contextual discernment. In view of its recurrence across various serial sequences on Er, T. S. Melka describes it as a "group divider". The asterisk symbol <\*> marks the line crossing.

<sup>&</sup>lt;sup>1</sup> HORLEY, P. Rongorongo *Tablet Keiti*.

<sup>&</sup>lt;sup>2</sup> MELKA, T. S. Structural Observations regarding rongorongo Tablet "Keiti", p. 167.

<sup>&</sup>lt;sup>3</sup> BARTHEL, T. S. Grundlagen zur Entzifferung der Osterinselschrift, p. 153.

<sup>&</sup>lt;sup>4</sup> MELKA, T. S. "Harmonic"-like Sequences in the rongorongo Script, p. 125.



**Melka and Schoch, Fig. 5.** Comparison of two sequences: Ia7 versus Ta7.<sup>5</sup> In the leftward section, tracings and code numbers belong to Barthel.<sup>6</sup> In the rightward section concerning Horley's improved tracings,<sup>7</sup> the present authors have amended

/532a/ into /V530/8 – the matrix-shape of /530/ is given as  $(64)^{1/2}$  ; its flanking elements /64/  $(64)^{1/2}$  seem to be a scribal choice on Ia –; /D670/ into /64s:V664/, and /V76/ into /720/724b?/. Another detail is the compounded glyph /84/ (Ia7), rendered as a single "horseshoe" glyph /27/ on Ta7<sup>10</sup> – as several RR glyphs and sequences are often simplified across the corpus according to personal impulses / perceived carving space, the last point is not unusual either. The vertical line (beneath the diamond symbol " $(64)^{1/2}$ ") indicates a potential textual divider.

<sup>&</sup>lt;sup>5</sup> See MELKA, T. S. Research Notes: "Santiago Staff' and "Honolulu tablet 3629"; HARRIS, M. Shared Sequences (Ngrams / Bigrams) – [Texts] Da • Db • Er • Ev • Gv • Ia • Na • Nb • Ta.

<sup>&</sup>lt;sup>6</sup> Code-number for Ia7 is found on BARTHEL, T. S. *Grundlagen...*, p. 72; code-number for Ta7 is found on BARTHEL, T. S. *Grundlagen zur Entzifferung der Osterinselschrift*, p. 80.

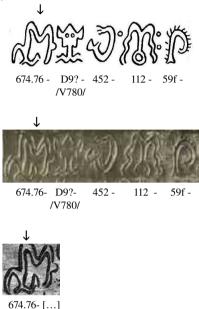
<sup>&</sup>lt;sup>7</sup> HORLEY, P. Comparative Structural Analysis of Rongorongo Script and Rapa Nui Songs, p. 219; Figure 3.

<sup>&</sup>lt;sup>8</sup> cf. also HORLEY, P. Comparative Structural Analysis of Rongorongo Script and Rapa Nui Songs.

<sup>&</sup>lt;sup>9</sup> BARTHEL, T. S. Grundlagen zur Entzifferung der Osterinselschrift; FISCHER, S. R. Rongorongo..., p. 218, chooses, in a general context, the designation "[...] the embracing affixes 64 \*\*.".

<sup>&</sup>lt;sup>10</sup> HORLEY, P. Comparative Structural Analysis of Rongorongo Script and Rapa Nui Songs.

"Small Santiago Tablet", Gv2



**Melka and Schoch, Fig. 6.** Structurally, the Gv2-sequence fits in a "pentad", if Fischer's "triad"-based algorithm<sup>11</sup> for the main pattern occurring on Ia, Ta, and Gv, is accounted for. Code-numbers are after Barthel (the original coding /D9?/ $^{12}$  is unlikely to go down well with the other attested variants /780/781/; hence its recoding  $\rightarrow$  /V780/). The photographic section is extracted from the public-domain site of Wikipedia; the full shape of the suffixed glyph /76/ is easily assessed in the enhanced grayscale photographic snippet of /674.76/ (in the collection of TSM.)

<sup>&</sup>lt;sup>11</sup> FISCHER, S. R. *Preliminary Evidence for Cosmogonic Texts in Rapanui's* Rongorongo *Inscriptions*, pp. 307–308, 311.

<sup>&</sup>lt;sup>12</sup> BARTHEL, T. S. Grundlagen zur Entzifferung der Osterinselschrift, p. 58.

<sup>&</sup>lt;sup>13</sup> WIKIPEDIA. Rongorongo text G.