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Don't Push this Button

Phoenician Sarcophagi, "Atomic Priesthoods" and Nuclear Waste[1]

The 5th century BC sarcophagus that once housed the remains of the Phoenician king Eshmunazor[2] II of Sidon can today be found in the Louvre; it was not allowed to remain in its intended place. The sarcophagus is fitted with an inscription (in the Phoenician language), which warns anybody discovering it in the future not to open it and reveal its royal contents:

> In the month Bul, in the fourteenth year of the reign of King Eshmunazor, king of Sidon, son of King Tabnit, king of Sidon, King Eshmunazor, king of Sidon spoke as follows: I was snatched away before my time, a son of few days (?), fatherless, the son of a widow. And I rest in this sarcophagus and this grave, in a place which I built. Whosoever you may be, from ruler to commoner, let him not open this resting-place and let him not search for anything, for nothing has been placed therein, and let him not take this sarcophagus, my resting-place, and let him not carry me off from this resting-place into another resting-place. Even if men tell you to, do not listen to them, for every ruler or commoner that opens this resting-place or takes away this sarcophagus, my resting-place, or that carries me off from this resting-place – may he have no resting-place among the Rephaim, and may he not be buried in a grave, and may he have no son or seed to come after him, and may the holy gods extradite him to a powerful ruler who shall rule over him, to cut him off, every ruler or commoner that opens this resting-place, or that takes away this sarcophagus, and the seed of that ruler or of those commoners. May there be for him no root below or fruit above or living shape under the sun. […] Whosoever you may be, from ruler to commoner, let him not open it and let him not uncover me, and let him not carry me away from this resting-place, and let him not take the sarcophagus, my resting-place, or else these holy gods shall extradite him and cut off that ruler or that commoner and their seed forever.[3]

Heavy threats indeed. No one is to open the grave and disturb the dead king. If anybody were taken with such a wicked idea as to open or remove the coffin, then (so the text says) he or she would not enjoy a "resting-place among the Rephaim" (the semi-deified ancestors or shades of the dead), he is to have neither "root" nor "fruit" under the sun, nor any offspring. That is, both his present life, his earthly inheritance and his spiritual future would be forfeit.

However, these gruesome warnings were of no avail. In 1855, the sarcophagus was discovered by the unstoppable forces of scholarship, and the resting-place of King Eshmunazor was thereby irreversibly damaged. The sarcophagus itself was indeed moved from its place – as mentioned above, it is today found in the Louvre.

This article, one of a "diptych", concerns what textual and philological material such as this can teach us concerning a much more modern topic – that of the preservation of information on the disposal/storage of nuclear waste.[4] This problem has been the subject of conferences and official investigations, and understandably so: how are we, who are (in the words of Pindar) ἐπάμεροι ("beings of [a single] day") and σκιᾶς ὄναρ ("the dream of a shadow), to communicate to people living many thousand years into the future what we have done with material that appears to be almost perpetually lethal – and warn them to keep away from the deadly load?[5] This is a question that involves not only technical fields and Semiotics ("are we to use signs or texts… or not mark the lethal resting-places at all?") but also, by necessity, thinking about historical issues, linguistics etc.[6] It is a question which in a strange way forces almost every discipline to become at least in part prescriptive, whether it is used to it (or likes it) or not. Yet, I will attempt to keep myself at the meta-level. The purpose of this article is not to provide answers to questions about in what way such information ought to be produced and stored but to highlight some of the questions that the issue of "nuclear waste information" gives rise to from the perspectives of the history of religions, history of ideas and linguistics.

"Proof by analogy is fraud"? Using analogies for discussing the question of nuclear waste information

To be able to contemplate the questions that arise in connection with the almost unfathomable time-depths involved in the nuclear waste issue – tens of thousands of years – one has to grasp at straws to come up with comparanda. In the recorded history of humankind, there is little that even comes close to this temporal scale – some exceptions consist of Stone Age art (e.g. cave paint-

ings). These are, however, not a very good comparative match for information concerning nuclear waste, at least not the more technical parts thereof. Still, some of them may possibly depict hunting scenes, perhaps with technology such as arrows or spears used to overcome beasts. If true, one could regard these early expressions of artistic endeavor as representing unintended pieces of transmission of technological information.[7]

If, as a prerequisite for decisions concerning how to preserve information about nuclear waste, we want to reflect upon ways in which humans have succeeded and failed in transmitting knowledge of technical subjects and concerning dangerous places and actions, it will not do merely to look at cave-paintings. We must turn to times from which we possess examples of written accounts and analyse how these have fared in the transmission of this type of information, in success as well as failure – a delicate task, as the failed cases are probably still unknown to us, which creates an unavoidable selection bias.

Bjarne Stoustrup, famous computer scientist and architect of the C++ programming language, once uttered the cynical words: "'proof by analogy' is fraud".[8] Notwithstanding this negative appraisal of this type of methodology – and it can certainly be justly criticized – "proof by analogy" is the only recourse available to us in this case. The popular adage of using history to "avoid making the same mistakes in the future" is here quite inadequate even though the decisions that have to be made must be based upon historical knowledge, as *there is no exact parallel to the nuclear waste question in recorded history*, not even a close one. The only way to conceptualize the time-depths is to try to find analogous phenomena from the much, much more temporally limited set of data that the written history of the human species can provide. In a way, this necessity of speculating based on "proof by analogy" may be illuminating not only for the question of nuclear waste information, but for the larger questions concerning the role of historical fields of scholarship. The question needs historical data and analysis, but needs to use them in order to predict something totally unpredictable, as no parallel example exists. This is a situation that may amply illustrate certain problems of historical thinking generally.

The example of the Antikythera Mechanism

So, one must begin with "analogous" data that we have preserved in writing. Sometimes, however, even writing can turn out to be deceptive. One example of this is the so-called Antikythera Mechanism, an advanced technological

device from the first century BC, a mechanical and mathematical marvel of its time, a very complex astronomical instrument. The Mechanism was discovered in 1900–1901 in a shipwreck off the Greek island of Antikythera. By today's standards, it can be considered a kind of analogue computer or calculator, capable of calculating planetary positions, solar cycles, etc. It could probably also be used to predict eclipses and similar phenomena.[9] Before the discovery of the device – and the complicated process of reconstructing its features – no one had any real notion that this type of advanced computing device existed in Hellenistic Antiquity. In retrospect, references have been found in ancient literature to technical equipment of similar nature, but for our purposes it is interesting to note how the knowledge of the mechanism had faded into oblivion before the physical mechanism was rediscovered and reconstructed (there have even been attempts to reconstruct it using LEGOs!).

The Antikythera Mechanism is an example of how advanced technological knowledge can be lost, and of the knowledge of it ever existing disappearing as well. As the Mechanism is so perfectly constructed, it is inevitable that it had precursors, and there was probably an entire intellectual tradition associated with this type of instrument – but this tradition disappeared, which illustrates how easy it is for technical information to be lost if one does not work with great dedication to ensure its survival. What the example of the Antikythera Mechanism shows is that we can very well imagine a situation in a future, high-tech society where, due to lack of knowledge transmission, one cannot imagine that our "primitive" culture would have been able to master such a difficult technology as nuclear power. Michael T. Wright makes a similar point, that modern scholarship has often underestimated the mechanical prowess of the Hellenistic age, and that the Antikythera Mechanism provides an antidote to such attitudes:

> […] [A]ncient planetaria were probably neither as rare nor as naive as many scholars have supposed. If the Antikythera Mechanism is a solitary surviving example of the genre, that is because it alone chanced to be lost in antiquity out of reach of the scrap-metal man, to be discovered and recognised in modern times. The uniqueness of its survival is not evidence of its uniqueness in the milieu in which it was designed and made. Moreover, the fact that this instrument has been altered, and is the outcome of the marriage of pre-existing instruments, provides evidence that it comes from a workshop tradition within which a range of comparable instruments was made. Our perception

> of Hellenistic culture must encompass both the degree of technical attainment to which the Antikythera Mechanism bears witness, and the fact that affluent members of society must have been willing to patronise workshops which could make such things. That enlarged historical perception is even more valuable to us than the specific detail of this one surviving instrument.[10]

Thus, in theory, it is not just dystopian, post-apocalyptic futures or environments that could cause problems for the safety of nuclear storage, but also those that rediscover ancient material without understanding it – or without understanding and respecting its intellectual culture or symbolic universe. It is quite easy to imagine that the inhabitants of a post-apocalyptic future world would have a hard time understanding information about nuclear waste, but the above examples show that even societies that are technologically superior (from the standpoint of the one "sending the message") can readily misinterpret the data.

Ancient water power

Another example of how modern thinkers may misinterpret technological development is the issue of ancient exploitation of water power. It has long been known that in Hellenistic and Roman Imperial times, the possibility of harnessing this source of power was known, particularly in the form of water mills; for example, the Roman author Vitruvius (active ca 30–10 BC) describes the function of the water mill. However, during much of the 1900s it was an accepted "truth" among scholars that this ancient technology was mostly theoretical and rarely used in practice – an approach that was based in a rigid conception of the ancient cultures as "slave societies" without ability or willingness to pursue technical progress. This notion – that the Greeks and Romans had so many slaves that they did not use water power – is associated most strongly with Moses Finley and the school formed around him. This school viewed Greco-Roman water power as a theoretical construct rather than as technical and economic reality. It was during the Middle Ages, so the story went, that water power came into greater practical use.

Over the past 30 years, however, scholars like Michael Lewis, Örjan Wikander and Andrew Wilson have shown that water power and water mills were prominently represented in the Roman Empire (being more cost-efficient than using only slaves, which were relatively expensive in terms of upkeep in relation to extractable force).[11] When modern research freed itself from a doctrinally

primitivist view of ancient technology, the archaeological evidence for ancient water mills could be reassessed. This shows that knowledge of ancient technology can sometimes be hindered due to ideological bias and selective picking of texts, and that in some cases, it is easy to come to the conclusion that technology which can be proven to have been known was rarely used. The same thing could theoretically happen regarding modern nuclear power. In other words, in a remote, high-tech future, it could be imagined that nuclear power was just a thought experiment to us, and not something that we really were able to make use of. This would obviously hamper efforts to keep people away from the repositories. Future scholarship might refuse to accept that such a thing ever existed.

Warnings, symbolic universes and religious élites

All this brings us back to Eshmunazor II and his funerary inscription. It certainly represents an attempt by the king and/or his scribes to scare off prospective grave-robbers – first the inscription states that there is no treasure to steal, but then it goes further: it threatens them with total annihilation. Yet, this had zero effect on modern scholars. The ability to read a warning is not necessarily enough to keep people away. They must also share the symbolic universe of the writers. They must know that the warning refers to something effectual and actually existing (cf. the Antikythera Mechanism and the Roman water mills for examples of the opposite situation). If one does not believe in Phoenician gods, or in the Rephaim, the threats seem empty. This would be an equally great problem in a possible future situation in which the idea of nuclear radiation could be regarded as outdated superstition.[12]

A fact that can hardly be ignored in this context is the role often played by fixed textual traditions in the dissemination and preservation of large bodies of information. These traditions are often found in religious cultures that create textual canons. We can see this process in action in such examples as the Hebrew Bible, the Christian New Testament, the Qur'ān, the Vedic and Hindu texts and the Buddhist Pāli canon. In all these cases, large amounts of text have been handed down more or less unchanged for a long time because there was a religious/intellectual infrastructure that had handled them, i.e. cadres of highly trained specialists who learned the words (in many cases by heart) and made it their task to study, pass on and comment on them through centuries and millennia. These intellectual élites have preserved not only the texts themselves,

but also the world-view surrounding and inherent in them. Such has been the case with the Vedic literature of India, which despite being over 3,000 years old was written down at a rather late period, its earlier transmission having been based on oral tradition from teacher to student. In the case of the Vedic texts there were and are a number of ingenious mnemonic systems that have been taught in parallel with the texts themselves to create a kind of automatic error correction, much like the checksums of computer software and modern cryptography. Similar work was performed by the medieval Jewish Masoretes ("traditionalists"), who carried out meticulous and painstaking work to preserve the text of the Hebrew Bible.

These examples show us, then, how textual material can be preserved for a long time if there is a group of ideologically motivated people making it their mission to pass it on, and such processes could be viewed as possible models for ways of preserving knowledge about nuclear waste.[13] But they also illustrate a potential hazard. In all these cases, the representatives of this tradition themselves continue to reinterpret texts in new contexts. In this manner, new ideas and thoughts have been read into ancient texts. This problem must be kept in mind: a future intelligentsia that knows our texts and warnings about nuclear waste could come to reinterpret them in light of the ideas and beliefs of their own time, perhaps in surprising ways.

Thomas Sebeok's "Atomic Priesthood" and the role of religion in nuclear semiotics

The role played by religious and religious-like intelligentsias in preserving ideas over vast periods provided the basis of Thomas Sebeok's idea of creating an "atomic priesthood", whose task it would be to keep the knowledge of nuclear waste alive both through preservation of textual material and institutionalized rituals that would time and again remind people of the seriousness of the issues at hand. He envisioned a legend-and-ritual, the annual recurrence of which would keep the memory alive. Perhaps controversially, he suggested that the masses should see only the surface of this preserved knowledge and that the truth should be reserved for the "priesthood" of academics itself – which would then select its own members as a self-perpetuating intellectual oligarchy.[14]

Sebeok's proposal is not the only time that religious or quasi-religious methodology has been suggested as a viable (or indeed, the only) way of preserving data about nuclear waste deposits. At a 1991 conference in Oslo (on the

question of the "Transmittal of Information Over Extremely Long Periods of Time"), legal scholar Knut S. Selmer said:

> It is my suggestion that the only possible way to influence human activity in a very distant future goes through religion. One must approach the leading circles of the great world religions, and persuade them that we are under an obligation to warn our distant descendants of the deadly dangers which we are creating in the environment. The danger symbols must be included in the set of holy symbols of each religion. The obligation to seek information and act upon it must be embodied in the central axioms. If the message could be given a form which was common to the world religions and which formed part of their rites and practices, one might hope that the message would survive and motivate people in a distant future.[15]

Here, the idea is a little different than that of Sebeok: instead of artificially creating a new "priesthood", Selmer proposed that we use existing ones as tools to keep necessary knowledge known in a way that could appear almost Machiavellian (using the forces of religion for nonreligious purposes). Notwithstanding this difference, however, Selmer's proposal appears to be quite similar to Sebeok's in essence.

These ideas of "atomic priesthoods" represent one attempt to make intellectual, religious élites a vehicle for the transmission of information about nuclear waste – and a very far-reaching and innovative one, showing how knowledge from the humanities could possibly aid in this very technical issue. When I first started working on the project leading towards the present article, I had similar ideas myself.

However, there are at least two weaknesses in this type of proposal. The first one is inherent in Sebeok's envisioning of a "myth and ritual" type construct, which would have to be deliberately fabricated, so to speak. The second one – connected with this – lies in his failure to take into consideration the constant use of textual interpretation and reinterpretation that is almost always a part of the activities of such groups.[16]

Meaning and reinterpretation in ritual and narrative material

The problem with the concept of artificially creating a mythology and a ritualized reenactment thereof lies in the fact that this idea is based in a paradigm of thinking about mythological material and ritual practice that is widely con-

sidered obsolete. Few scholars of religion today would subscribe to the notion that religious rituals are always or even mainly meant to facilitate remembering of narrative material. Perhaps the most radical instance of this tendency not to ascribe symbolic meaning to ritual action is represented by Frits Staal's 1979 article "The Meaninglessness of Ritual", the title of which states in the most unequivocal of terms the point that rituals need not carry any meaning at all. Although one may, in all fairness, consider Staal's position too extreme – there are certainly examples of religious rituals with clearly intended narrative or symbolic content – the fact remains that a one-to-one relationship between myth and ritual is rare. And even more importantly: those rituals that have an ideological, narrative or symbolic meaning attached to them tend to be the objects of exegetical reinterpretation, with practitioners adapting the interpretations of rituals to new situations and needs – a process that may alter the "meaning" of the ritual considerably.

One example of this process is the Jewish festival of Pesach, which probably today partly represents a reinterpretation of an older "festival of the unleavened bread".[17] This appears originally to have been an agricultural festival, which was only secondarily attached to the story of the Exodus from Egypt as part of an ongoing interpretative reworking. When the Seder meal and the other parts of Pesach are celebrated in Jewish communities today, the story of the Exodus is recounted in the form of the Haggadah – but much of the original meaning of the ritual tradition is forgotten and only retrievable through religio-historical research. In Antiquity, one can well imagine that both interpretations of the ritual coexisted (in layers, so to speak), but with time, the agricultural interpretation faded. This example shows – as do many others – that it cannot be presupposed that ritual meaning will be preserved intact through the millennia simply because a version of the ritual as such continues to be practiced.

Another, even more tantalizing example of this problem comes from the realm of comparative Indo-European mythology. From an early point in the historical and reconstructive study of the Indo-European linguistic family, there have been efforts to reconstruct not only the language of the Proto-Indo-European speakers, but also scraps of their mythology and religious beliefs. One of the most well-known of these reconstructed Indo-European mythological patterns concerns the battle between a hero and a great serpent monster. This type of tale occurs in many parts of the Indo-European cultural area, and a number of scholars – among them Calvert Watkins and M.L. West – have used these scattered pieces of evidence to try to reconstruct an actual, prehistorical

Indo-European protomyth from which they supposedly descend.[18] The question whether the assumption of such a mythological construct is valid is very complex and falls outside the scope of this article. However, if one accepts for the sake of argument that a Proto-Indo-European serpent slaying myth really did exist once – and that the attested stories of this nature in Indo-European-speaking cultures derive from that ancient story – then that relationship has quite a lot to teach us about the problems of mythological transmission.

It appears that not much more has been retained in the "descendant" myths than the idea of a hero slaying a great serpent, often using some kind of weapon. If Watkins is to be believed, certain pieces of vocabulary appears often to have been inherited in order to tell the story (especially the word for "kill"), but other than that, the details of the attested myths are quite different. Even though the Indo-European mythological pattern may have been almost miraculously preserved for thousands of years, only the most central nucleus of the story has remained. The example illustrates how volatile such a tradition can be. If no more than "a hero killed a serpent with a weapon" was preserved in that case, it must be borne in mind that, though Sebeok's idea of an "atomic priesthood" is certainly thought-provoking, the possible problems involved are enormous.

In a similar way, the texts of the Old Testament, which have, it must be granted, been transmitted down through the ages with a very high degree of accuracy, have constantly been subjected to extensive reinterpretation and adaption to new and novel circumstances. A very poignant example of this process can be found in New Testament and later Christian rereadings of Old Testament materials, which would have surprised the original authors and redactors a great deal. The person responsible for formulating Isaiah chap. 40 would probably have been rather unprepared for his words "a voice crying: make a way through the wilderness for Yahweh" being reconstrued by a New Testament author as a prophecy about John the Baptist.

The difficulties inherent in the "annual ritual" approach can also be illustrated by an example from the sphere of Indo-European religion. One of the few possible Proto-Indo-European religious rituals that has been suggested to have been handed down to various Indo-European-speaking peoples is the horse sacrifice, occurring in varying versions in India (the *aśvamedha*), in ancient Rome (the *October equus*) and possibly among the Celts.[19] But even if one accepts the idea that all these rituals descend form an Indo-European proto-ritual, their inner-cultural "meanings" are vastly different.

Another problem lies in the question of the intended "theology" (so to speak)

of the "priesthood". One could imagine a situation in which the knowledge possessed by these individuals could be used for less positive purposes – for example, somebody could come up with the idea that the copper canisters that are proposed as a safety measure for storing the nuclear waste produced in Sweden could be harvested for metal. In that case, the morality (and insightfulness) of the élite group would definitely be put to the test.

All this means that an "atomic priesthood" would have to consider very thoroughly the methodological issues and problems inherent in its mission. Simply creating a mythology and ritual would not be enough. Equally important would be perpetuating the symbolic system and intellectual milieu that gave rise to the warning texts, providing an interpretive framework in which they can be read. To use an analogy, they would have to teach the people not only to read Eshmunazor's Phoenician text – they would also have to teach them to believe in the Rephaim and Phoenician religion. And keeping such a tradition alive for millennia is a daunting task. It is not only a question of handing down a symbol system (as mediaeval classicists did, e.g., concerning the Greek and Roman pantheon) but of keeping that symbol system *believable* (which they generally did not). Generations of mediaeval and modern authors happily used Greco-Roman religious symbolism to embellish their literary creations without actually believing in the religions in which those symbols originally belonged. One finds many people today using adjectives such as "phlegmatic", "saturnine" or "jovial" without that fact in any way implying that they therefore subscribe to the humoralistic or astrological knowledge systems from which those terms originated.

Another important problem in trying to assess old textual material perhaps containing "scientific" knowledge is the matter of genre. If one does not correctly assess the genre of a text, any understanding of it perforce becomes erroneous. This is a problem constantly at the forefront in exegetical scholarship and in interpretive philology generally. A simple example can illustrate this fundamental problem:

In a study of the ancient myths about the storm god Baal from Ugarit, Johannes de Moor argued that these texts reflect an allegory expressing the seasonal changes of the ancient Syrian climate, and that the mythology is therefore to be regarded as a form of proto-science.[20] This is one possible way of reading the material, but not the only one. If one is so inclined, the story of Baal can be interpreted as a way of reflecting upon such material surroundings. But only if you allow the genre of the text to speak of such matters (which I, for one, think one should, at least to an extent).

A more bizarre example reading ancient mythological material as proto-science can be found in the works of fringe writers such as Zechariah Sitchin (the "von Däniken" of Mesopotamia), who interpreted the Babylonian creation story *Enuma Elish* and other Mesopotamian texts as containing descriptions of ancient extraterrestrial astronauts, spaceships, etc. Similar outlandish interpretations have been applied to the Old Testament – the majestic vision of Ezekiel chapter 1 has been a favourite in this regard, speaking as it does of strange "wheels" (*'ōfānîm*) and other such phenomena. When one considers texts concerning nuclear waste disposal, the problem at hand will probably be a direct opposite one: the danger would probably be that of actually scientifically based texts being read as something else ("superstition", for example). This, I believe, is yet another problem with the "atomic priesthood" model argued by Sebeok: the somewhat secretive, élite organization that he envisions would probably run great risk of being misunderstood as something fundamentally different than what it was meant to be (though I must underscore that we have little to no way of knowing exactly what form such a misunderstanding would take).

Conclusions

In sum: the role played by religious or quasi-religious élites and texts in transmitting knowledge into later times has definitely been of inestimable import, and Sebeok was both right and in a sense prescient to point to this phenomenon as relevant to the question of preservation of information about nuclear waste. However, it cannot be denied that he appears to have downplayed some problematic issues raised both by creating artificial "priesthoods" and corresponding rituals and by the question of the reinterpretability of texts (even when they are successfully read and "understood" on a purely linguistic level).

One must also remember that the "analogies" adduced in this article are of different kinds. Some have to do with creating hopefully unbroken chains of textual or oral tradition, and some concern texts or technological data that have been rediscovered by modern scholarship. A similar dichotomy must be kept in mind regarding future readers as well – they may be confronted with information because it has been continuously preserved, but they may also have rediscovered it and then try to make it understandable. Both of these possible situations must be taken into account.[21]

The perspectives sketched here may invite further discussion on these vital issues from scholars from different disciplines; I hope to have demonstrated that insights from philology and religious studies may be illuminating for the question at hand – and, as mentioned, the nuclear waste question gives those who work in historical disciplines an entirely unique problem to think about. Discussing it, the historian is in a sense part of creating the history he or she is studying, and matters such as these pose vital questions about what it really means to communicate historically – into the future. What does it mean to speak to people who will not be born for generations? This puts the study of history in a special light – it makes us ask what it really is we are reading when studying ancient texts. Were we the ones Eshmunazor II was writing to, and do we really understand what he was trying to say?

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Notes

1 This article has gained considerably from discussions in (a rather unusual!) session of the seminar in Old Testament Exegesis at Lund University, as well as from many insightful remarks from Örjan Wikander.

2 Often also rendered as Eshmunazar.

3 *KAI* 14; my translation (cf. the renderings in *ANET*[3] [p. 662] and *COS* [vol II, s. 182–183], which have inspired it). On the Eshmunazor inscription as a literary unity, see Faber 1986. The original text runs (with some word breaks added): *byrḥ bl bšnt ʿsr wʾrbʿ* 14 *lmlky mlk ʾšmnʿzr mlk ṣdnm bn mlk tbnt mlk ṣdnm dbr mlk ʾšmnʿzr mlk ṣdnm lʾmr ngzlt bl ʿty bn msk ymm ʾzrm ytm bn ʾlmt wškb ʾnk bḥlt z wbqbr z bmqm ʾš bnt qnmy ʾt kl mmlkt wkl ʾdm ʾl yptḥ ʾyt mškb z wʾl ybqš bn mnm k ʾy šm bn mnm wʾl yš ʾ ʾyt ḥlt mškby wʾl yʿmsn bmškb z ʿlt mškb šny ʾp ʾm ʾdnm ydbrnk ʾl tšmʿ bd
nm kl mmlkt wkl ʾdm ʾš yptḥ ʿlt mškb z ʾm ʾš yš ʾ ʾyt ḥlt mškby ʾmʾš yʿmsn bmškb z ʾl ykn lm mškb ʾt rpʾm wʾl yqbr bqbr wʾl ykn lm bn wzrʿ tḥtnm wysgrnm hʾlnm hqdšm ʾt mmlk<t> ʾdr ʾš mšl bnm lqṣtnm ʾyt mmlkt ʾm ʾdm hʾ ʾš yptḥ ʿlt mškb z ʾm ʾš yš ʾ ʾyt ḥlt z wʾyt zrʿ mml<k>t hʾ ʾm ʾdmm hmt ʾl ykn šrš lmṭ wpr lmʿl wtʾr bḥym tḥt šmš* (…) *qnmy ʾt kl mmlkt wkl ʾdm ʾl yptḥ ʿlty wʾl yʿr ʿlty wʾl yʿmsn bmškb z wʾl yš ʾ ʾyt ḥlt mškby lm ysgrnm ʾlnm hqdšm ʾl wyqṣn hmmlkt hʾ whʾdmm hmt wzrʿm lʿlm*

4 The other article (Wikander, O. [forthcoming] 2015) is more specifically concerned

with arguments from (historical) linguistics and the study of ancient languages and writing systems in the nuclear waste question.

5 The field has come to be known by the fitting term *Nuclear Semiotics*.

6 Nolin (1993: B2) specifically mentions "archive research, historical, linguistic, social and philosophical disciplines" as necessary parts of the needed research into the question.

7 However, what these "missile-like" parts of the paintings really signify is not always clear (see Bahn & Vertut 1997: 171–173 for a discussion).

8 Stoustrup 1997: 692.

9 For an introduction to the Antikythera Mechanism, see e.g. Hannah 2008: 744–746, and, more specifically, the work of Michael T. Wright, whose reconstruction of it is presented in Wright 2007.

10 Wright 2007: 41.

11 See, for example, Lewis 1997, Wikander, Ö. 1984, Wikander, Ö. 2008: 137, 141–152 and (about ancient use of power generally) Wilson 2002.

12 This point is also made in Lapidos 2009, referring to Egyptian texts of a similar nature.

13 Also apparently pointed out in Jensen 1993: 9, where "oral traditions" are mentioned.

14 Sebeok 1984: 24. He also refers to the ineffectiveness of ancient "grave-robber" curses (Egyptian, in his case).

15 Quoted in Garfield 1992; also discussed in Duncan 2011 and 2012.

16 Cf. also the criticism of Sebeok's scheme in Aho 1989: 60–61, where the secrecy of the "atomic priesthood" is attacked, among other things.

17 See, for example, Dozeman 2009: 291–294 for a history of research on this issue.

18 The most far-reaching example is Watkins 1995. See also the discussion in West 2007: 255–262.

19 On this, see West 2007: 417–419.

20 de Moor 1971 (see esp. p. 249, where de Moor writes that the Baal Cycle constitutes "an early attempt of man to give a comprehensive explanation of the climate in his surroundings" and that it thereby is of interest not only to the history of religion but also "deserves a place in the history of science").

21 This duality (and some other points made in this article) is also referred to in Blixt & Jensen 2004: 5–6, but from a prescriptive point of view; the authors discuss tradition vs. rediscoverable physical textual data as two possible ways of preserving nuclear waste information.

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