

Mundane Cryptography: Toward a Cultural History of Cryptography

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Abstract

This paper aims to explore another way to study the history of cryptography. Following Benedek Láng's research program from *Real Life Cryptology*, it offers an alternative method to contextualize cryptographic practices inside a broader history of secrecy, inside the social and cultural setting of the studied society. To do so, this paper suggests utilizing approaches from the French cultural history and, firstly, to recontextualize the social situation of the users of cryptography, including those who do not belong to an elite; secondly, to use a broad variety of sources, including sources which are not political or diplomatic, nor secret writing manuals. The examples of the cryptographic practices of mnemonic teachers and authors illustrate this methodology and reveal hitherto unstudied mundane cryptographic practices.

1 A Methodological Proposal

Since the blossoming of the history of cryptography after Kahn's fundamental book (1967), historians interested by this theme have focused mainly, on one hand, on theoretical sources with an internalist view of the cryptographic science and, on the other hand, on the political uses of secret writing (including diplomacy, intelligence, and warfare). This paper aims to propose another approach, inspired by the methodology of the French *histoire culturelle*. Indeed, the political history of cryptography already includes high-quality works. To cite only few authors, Camille Desenclos (2018; 2021) revealed aspects of the materiality of cryptographic sources as well as hitherto unstudied sources regarding French interior and exterior politics in the Sixteenth century; Nadine Akkerman highlighted the role of women in

political history *via* their cryptographic practices and/or spying (2011; 2015; 2018). The political use of cryptography in more remote areas, such as Latin America, has long been highlighted and studied (Lohmann, 1954; 1955; Galende, 2000). Conversely, the cultural aspect of cryptography has not been studied much. Ellison (2017) offers a pioneer work in this field but sticks to manuals – i.e., theoretical sources – instead of exploring the actual practices.

However, the history of cultural practices of cryptography is not a *terra incognita*, though it is often proceeding from historians who do not focus mainly on secret writing¹. Furthermore, the groundbreaking work of Benedek Láng (2018) has already highlighted the importance of “the social and political background, the intentions, the cryptographic skill and choice of tools of those using cryptographic methods”, in order to “reintegrate the history of ciphers in the growing scholarship on secrecy” and, overall, to understand better the history of cryptography (Láng, 2018, p. 13). This paper has not the ambition to update the research program he mapped², but rather to propose another approach to reach the same aim. The French cultural history, and more specifically the “histoire culturelle du social”, led by Roger Chartier (1989, p. 1511), has developed a methodology which may be used heuristically in the field of the history of cryptography. Firstly, the cultural approach interrogates the social situation of the doers of cultural practices. Here, it would be fruitful to remember that though cryptography may have been “a second mode of literacy for royalty and the elite” (Akkerman, 2016, p. 72.), it has also been practiced by everyday people to reach prosaic objectives. Shifting from the political uses of cryptography to these mundane practices would

1 See, for example, the study of Hunter (2011) on Robert Boyle.

2 See Lang, 2018, p. 29-30. To sum up two pages of bright proposal of research avenues, we should now aim at

contextualizing cryptography, not by forgetting its technical aspect, but by understanding how these techniques were embedded into the social practice of the studied time.

allow a broader, more contextualized, history of cryptographic practices. Secondly, Roger Chartier underlined the fact that the study of texts does not coincide with the study of the practices and thoughts that the texts were supposed to create, i.e., in order to write a history of practices, historians need to rely on a broad variety of sources (Chartier, 1987, p. 13). Applied to cryptography, it means that we should put aside the fascination for crypted sources to study both enciphered materials, but also plain text descriptions of cryptographic practices and, in general, any kind of sources which refer to secret writings.

This paper aims to illustrate the methodology proposed *supra* by analyzing mundane cryptographic practices hitherto un-studied. It will mainly focus on the cryptographic practices of mnemonists in Seventeenth century Europe, as this example illustrates both cryptographic uses and the sensibility toward secret writings in Early Modern society.

2 Cryptographic Practices: Preserving Secrecy or Creating Bonds?

Mnemonics of this time consist of the symbolization of information as mental images, which were placed into a mental space (this method is nowadays named “mind palace” or “method of *loci*”). Some memory experts earned a living by teaching this method. At first glance, nothing seems to link these persons to cryptography: they did not play a political role at their time, neither did they tried to invent new and safer secret writings. For these reasons, mnemonists constitute a perfect test case to highlight the existence of mundane cryptographic practices.

Lambert Schenckel (1547-after 1624) was the single most important mnemonic teacher from the Sixteenth and Seventeenth centuries alike. He started his career as a teacher in Malines, using mainstream pedagogical methods. After 1588, he had a financial issue, could not reimburse a debt, and got fired from his job (Steenackers, 1932, p. 10-13). Luckily, he learnt the art of memory

from the Irish Jesuit Patrick Lenan in 1592³, and then started to teach mnemonics as an itinerant tutor. Though Schenckel started to teach mnemonic maybe more by necessity than by conviction, his activity flourished quickly and, in a prospectus dated from 1619, he announced having taught in seventy-nine different cities, and having sent a fellow teacher to another five, as far from each other as Anvers to Prague or Toulouse to London⁴. His business model was built on his notoriety as a mnemonic teacher – a notoriety constructed thanks to dozens of self-advertising prospectus or books including account of memory feats and students’ testimonies, and thanks to public exhibitions of Schenckel’s students’ memory -, but also on the image of secret knowledge he wrapped his techniques in.

To keep his techniques secret, Schenckel used two methods. Firstly, he made his students pledge to stay silent about the content of the techniques he taught them. All his students did not respect their agreement, and one mnemonist presenting himself as one of Schenckel’s students even included in his own mnemonic manual the text of the oath he had broken (Le Cuirot, 1623, p. 177-179). Secondly, Lambert Schenckel used cryptography to restrict the access of books he published to a specific public: the students who attended his classes. His *De memoria liber secundus* (1595) was a handbook summarizing his classes, designed as a written reference the students may use after Schenckel left for another city. Obviously, some of the students who knew the cipher decided to earn money by publishing the manual in plain text. This did not please Schenckel, who reproached the plagiarists for not only their lack of morality, but also for the bad quality of their works written in plain text⁵. This second critic aimed to discourage his readers – and potential future students – to buy one of these books instead of attending his classes... and retributing him in exchange for his mnemonic teaching.

The encryption was thus inefficient to protect the technical know-how. However, as Manuel Mertens (2015) has pointed out, Schenckel’s use of cryptography may be understood as a way to

3 Schenckel acknowledges his debt to Lenan in a self-advertising prospectus from 1594 (p. A2v-A3r), which text starts with “Benevole lector” and whose only extant copy is placed inside an exemplary of his self-advertising book *De memoria libri duo* in the Royal Library of Belgium (VH 8847 A LP).

4 The list of the cities, with the indications of their nowadays names, can be found in Hoven, 1970, p. 125-126.

5 He is especially loquacious on this matter in his *Methodus*, an advertising booklet promoting his ability to teach Latin and mnemonics (p. 100-123).

present its mnemonic knowledge as secret, and thus valuable. Indeed, the art of memory taught by Schenckel was by no mean an innovation in Early Modern Europe. Since the Fifteenth century, dozens of mnemonic manuals have been published, as well as a far greater number of books including a compendium of the art of memory – such as Suarez Cipriano’s *De Arte Rhetorica libri tres*, the most published Jesuit rhetorical handbook⁶. This use of a cypher to present himself as the owner of an occult, restricted knowledge, is even more obvious in the case of Henry Herdson, an English memory teacher. In his *Ars Mnemonica* (1651), Herdson used an extremely basic substitution cipher: seven words are substituted by letters (always the same), and other six expressions are substituted by their Latin translation. Furthermore, he gives the key to his code on page 70, between the epistle and the main text. Thus, this cryptographic practice may only be understood in his cultural context, as a mean for the author to earn authority through the symbolic weight of an enciphered text.

Schenckel’s key is not so obviously indicated in his book. However, his use of cryptography to create “secrecy without a secret” (Vermeir, 2012) is confirmed by the analysis of his cipher, which is easy to understand. In his *De memoria liber secundus*⁷, Schenckel enciphered some words by writing them backward, and by adding two nulls: one letter at the beginning of the word, and another one at the end. Thus, “penidrot” means “ordine” and “senigamis” became “imagine”. Furthermore, a few words are substituted by letters. For example, “c” means “ordo”, “g”, “t” and “u” mean “imago”, “o” signifies “memoria”, and so on. If a word in its plural form is substituted by a letter, this letter is doubled, e.g., “gg” for “imagines”. This subtlety may not have increased the difficulty to break the cipher, as the key is given at the pages 107-108, although it is given in a crypted form (i.e., “c”, which means “ordo”, is indicated as “codrot”). Overall, if some curious reader had the will to break the code, he would have achieved it

Thus, if the protection of its mnemonic knowledge was not the main objective of Schenckel cryptographic practice, why did he use it? His public and private exhibitions, the

approbations of his method by bishops and other local authorities, and even the suspicion of practicing black magic that he was confronted with in 1593, were more than enough to guarantee his celebrity. Furthermore, when he arrived in a city, he started by making demonstrations of his memory capacities and by diffusing his self-advertising booklets, not by spreading encrypted manuals. Thus, though using cryptography have helped reinforce his image as the owner of a valuable and secret knowledge, this was not his main advertisement method. Instead, we may assume that he used a cipher as “community-building” tool (Crawforth, 2011, p. 144; also Akkerman, 2016, p. 72), employed to frame the relationship between the teacher and his students. Indeed, during the oral teaching, Schenckel may have used his position of code-maker to appear as the owner of a valuable secret he was going to transmit to his students. Henceforth, if the students considered themselves as part of a selected few who knew how to decipher Schenckel’s manual, they may have regarded the teacher-student relationship they had as privileged. Though we have seen that several of his former disciples were eager to publish his classes in plain text to earn money themselves, Schenckel nonetheless had good relationships with other students and mandated some of them in cities he had not the time or will to visit. This was a risky move, as a former student may teach the mnemonic knowledge without paying him back, but it was also a possibility to multiply his incomes by touching a broader public – for example, Peter of Paris, one of his former disciples, went to Heidelberg to teach in Schenckel’s behalf, and brought him back part of the money he had earned there (Schenckel, 1619, p. 100-101). Thus, the quality of personal relationships between Schenckel and his students was significant in his business model. One way to reinforce it was to create an affective bond through cryptography, making his students thinking they were amongst the happy few who had access to a special, secret, mnemonic knowledge, thanks to their teacher’s goodwill.

Schenckel’s cryptographic practice is a good example of a mundane use of a cipher: the content it hid was not a secret, as we can find the same knowledge in other books; Schenckel, and most of

6 Published first in 1562, he had both a quick and long-lasting reception (Flynn, 1955).

7 I have read this book at the Bibliothèque Sainte-Geneviève at Paris, D. 8° 11171 (3). According to their online catalogue,

another extant copy exists at the Universitätsbibliothek der LMU München, 0001/8 Philos. 1006. This scarcity of copies may be a consequence of its enciphered nature, as it was uninteresting for anyone who did not know the key.

his known students, were not part of the nobility nor of the economic elite; the enciphered texts had no impact on any political event or any scientific discovery. However, understanding this everyday cryptographic practice helps us to approach how people considered cryptography in Early Modern Europe.

3 Sensibility toward Cryptography: Why People were Mixing up Mnemonics and Cryptography?

Comprehending the way contemporaries looked at secret writings can thus be done *via* the study of actual cryptographic practices, but it should also be sought through testimonies of the people's sensibility toward secret writing. For example, mnemonics and cryptography were often mixed up. In the correspondence between Leibniz and Ferdinando de' Medici, heir of the Grand Duchy of Tuscany, such a confusion is blatant. In 1699, Ferdinando asked Leibniz's advice to learn both the art of memory and secret writing. Leibniz answered him pedagogically, explaining that they were two very different things, and that he could not indicate a unique teacher for both these disciplines⁸. As for the mnemonic teacher, Leibniz recommended a fellow Hanoverian named Lübbern. This mnemonist had a student, Döbel, who was supposed to teach Lübbern's mnemonic "secret" knowledge in cities in the East of nowadays Germany, such as Leipzig and Rostock, and to bring back part of the teaching fees to his former master, something he never did. Before Lübbern realized his student's deception, he answered several letters in which Döbel requested help to answer the demands of his own students – who asked a method to memorize the Bible, another to learn Russian quickly, another to learn juridic texts, etc. Amongst the needs he had to face, Döbel had to provide a cipher to his disciples. The cipher, invented by Lübbern (1707, C1^v), is probably the one Döbel gave his readers in his *Collegium Mnemonicum* (1707, p. 491-494), and is explained in the appendix A. Here, more important than the cipher itself, is the fact that learned people were mixing up cryptography and mnemonics.

This confusion was not caused only because a few mnemonists, such as Schenckel or Herdson, used cryptography to inflate the perceived importance of their knowledge. Both disciplines rely on substitution techniques: whereas cryptography substitutes the plain text by letters, numbers or other symbols, the art of memory substitutes data (concepts, words, numbers, etc.) by mental images representing these data. Further confusion was helped by the fact that the famous polygraph Giovanni Battista Della Porta (1534-1615) wrote both influent cryptologic and mnemonic manuals, by Schenckel's fame as not only a mnemonist but also a cryptographer⁹, and by the undifferentiation between mnemonic and lullism, cabalism and magic (Yates, 1984). Relying on substitution techniques and often seen as linked to hidden knowledge, mnemonics and cryptography were somehow similar for the contemporaries, and thus were often mixed up together. In one case, such a mix gave birth to a baroque handbook: Johann Justus Winckelmann (pseud. Stanislaus Mink von Weinsheun) wrote a mnemonic manual, *Relatio novissima ex Parnasso de Arte Reminiscentiae* (1648), which was also a cryptographic handbook, providing ciphering methods such as Trithemius's *tabula recta*.

Though Winckelmann's was a very specific case, it was not unusual to find mnemonic manuals in which an easy method of cryptography was also indicated. Indeed, as the broad readership was mixing both disciplines together, some authors decided to supply the cryptographic demand, which in turn may have bolstered the confusion between the art of memory and the art of cryptography. Beside Döbel's *Collegium*, Adrian Le Cuirot's *Magazin des sciences* (1623) also provided a cipher to his reader (p. 169-176). Actually, he gave Schenckel's code, but provide the example of a (forbidden) love letter "d'un courtisan à l'endroit de sa maitresse"¹⁰. Such as Döbel, Herdson and Schenckel, Le Cuirot had pecuniary interest in spreading the art of memory. The mnemonists members of religious orders, who trained fellow religious to memorize their sermons and to realize good predications, never taught cryptography in their manuals, though some of them knew both the art of memory and

⁸ They are "deux artifices si differens; dont l'un porte fort loin le jugement, et l'autre la memoire" (Palumbo, 2006, p. 580).

⁹ In his *Steganologia*, Schwenter (c. 1620, p. 189) credits Schenckel the invention of a simple substitution cipher, matching each letter with a circular symbol. However, such a

code has not been found in Schenckel's writing, nor has Schenckel been described using it by his students and fellow mnemonists.

¹⁰ The plain text is given p. 278-279.

secret writings (e.g. Francesco Panigarola. On his use of ciphers: Kahn, p. 151).

This pecuniary motivation to present himself as the owner of enciphered secret knowledge, and/or to teach cryptography beside mnemonics, is perfectly exemplified by Jerónimo Argenti, also called the Conde de Nolegar Giatamor. Nolegar's *Assombro elucidado de las ideas* (1735) contains a chapter on the "vocablos ocultos" (p. 67-70) in which, as Schenckel, he promoted the use of null letters at the beginning and the end of words, and the practice of writing words backwards. In the next chapter (p. 71-77), Nolegar also provided several substitution alphabets:

Contius.	Abecedario primero.		Abecedario,		72			
	A	C	A.	N.3.	A	N.4.		
A	B	D	A	M	A	S	A	Q
B	C	E	B	N	B	Y	B	Z
C	D	F	C	O	C	O	C	P
D	E	G	D	P	D	M	D	C
E	F	H	E	Q	E	F	E	S
F	G	I	F	R	F	V	F	E
G	H	K	G	S	G	L	G	I
H	I	L	H	T	H	X	H	V
I	K	M	I	V	I	G	I	L
K	L	N	K	X	K	N	K	B
L	M	O	L	Y	L	R	L	D
M	N	P	M	Z	M	A	M	R
N	O	Q	N	A	N	T	N	Y
O	P	R	O	B	O	H	O	N
P	Q	S	P	C	P	E	P	F
Q	R	T	Q	D	Q	I	Q	K
R	S	V	R	E	R	P	R	X
S	T	X	S	F	S	B	S	A
T	V	Y	T	G	T	Q	T	O
V	X	Z	V	H	V	Z	V	T
X	Y	A	X	T	X	C	X	M
Y	Z	B	Y	K	Y	K	Y	H
Z	A	C	Z	L	Z	D	Z	G

[Figure 1. Nolegar's substitution alphabets – they are not side by side in Nolegar's book]

Furthermore, he also provided more complex ciphers (p. 77-104), including a polyalphabetic one relying on seven different alphabets, and narrated a love story in which it was used. The girl's parents would not accept the suitor, who communicated to his lover that he would come to her house during the night to help her escaping. Beside the anecdote, Nolegar recognize that the polyalphabetic cipher may be "funny" ("mui divertido"), but also very "tedious" ("mui engorrosos"), and thus has no practical value but may please those who "have not to study a lot" ("que no tienen mucho que estudiar").

This content has no link with mnemonics whatsoever and may have not interested readers seeking to improve their memory. However, in a

few instances, extant copies bear *marginalia* which attest the interest of the readers for the cryptographic methods transmitted in the mnemonic manuals. For example, copies of the *Assombro elucidado* present far more reading notes in this part of the book than anywhere else. It may also be the only passage in which readers added intertextual references in the margins¹¹.

Thus, a part of the mnemonists' students and readers expected them to teach secret writings. Therefore, several mnemonists who taught or wrote to earn money did explain cryptographic methods, thereby reinforcing the confusion between cryptography and mnemonics. The ciphers used were easy to comprehend, or more complicated but branded as useless and just good to play with. These mundane cryptographic practices participated to the sensibility of Early Modern people toward secret writing, seen as a way to protect valuable knowledge, a skill that even normal people may master, or as a mere otiose game. This last representation of cryptography is by no mean contradictory with the others: it depended on the complexity of the cipher. When an easy-to-use cipher may be seriously considered to communicate, a polyalphabetic alphabet would be seen as an oversophisticated tool.

4 Coming back to the French Cultural History: Narratives as Historical Sources

Mnemonists' cryptographic practices were a good example of the usefulness of a cultural approach of secret writings. By focusing on mundane actors, we have discovered new cryptographic practices and we have deepened our comprehension of the sensibility of Early Modern contemporaries toward cryptography. However, mnemonists sources cannot be used to illustrate other benefits of the French cultural history approach. It is time to set them aside to focus on another kind of source, widely used by historians such as Roger Chartier to study the history of reading practices, and that we can use to analyze the history of cryptographic practices: the narratives.

¹¹ Library of the Washington University of Saint-Louis, BF383 N6; Barcelona, CRAI, 07 102/2/31.

Analyzing fictional works to understand the general sensibility toward cryptography has already been sketched, e.g., Karen Britland (2018) uses Rabelais's *Pantagruel* (1534) to better understand the relation between Sixteenth century people and invisible ink. Obviously, a narration such as *Pantagruel* is not a proof of actual cryptologic practices – after all, Rabelais's reference to the scytale is perfectly anachronic – but give an indication of the author's (and henceforth, of the author's social milieu's) point of view toward cryptology.

The mocking tone used by Rabelais may be paralleled with Ben Jonson's (1572-1637) jeering description of statemen using Della Porta cryptography and steganography methods (Bevington, 2012, p. 158-159)¹². This poem attests the diffusion of Della Porta amongst the English elite of the time, and the fact that part of Early Modern Society considered cryptography – and probably steganography even more – as a ridiculous activity.

Calderon de la Barca's play, *El secreto a voces* (written in 1642, published in 1650), illustrates even more how a narrative may be difficult to interpretate in terms of actual cryptologic practices, but very rich in information about the contemporary sensibility toward cryptography. In its story, two lovers, Laura y Federico, use a large array of cryptologic devices, starting by transmitting a message in a glove, then using a Cardan grille and ending up using acrostic while talking in presence of others. If this last cryptologic practice fits well in a play, it is difficult to imagine it happening in real life. The mention of the Cardan grille may be a hint of an actual use of the device – after all, it was used a century earlier in Spain (Devos, 1950, p. 71) and around the same time in England (Eales, 2001; Taylor, 1854 p. 191-200). However, as a fiction, *El secreto a voces* may only indicates the possibility of future findings in steganography practices in the Spanish Golden Age, and is no proof by itself. Conversely, the play should be considered as a valid testimony of sensibility toward cryptology, as its humor is partly based on the characters' reaction regarding cryptology. Indeed, Calderon wrote the play considering that

12 "They all get Porta, for the sundry ways
To write in cypher, and the several keys,
To ope the character. They've found the sleight
With juice of lemons, onions, piss, to write,
To break up seals and close 'em."

the courtly public of the drama would laugh at Fabio, Federico's servant, who had to spy his master for the benefits of Flérída, a duchess in love with Federico, and who is also his employer. If the character of Flérída bears defects, such as her immoderate and impossible love for her secretary, the actual buffoon of the play is Fabio. Indeed, as he was not able to understand how his master was able to communicate with his lover, he concluded that he was using black magic. Thus, while the ignorance of the character with the lowest social status brought him to a foolish conclusion, it was not the case of the characters pertaining to the nobility. As Calderon's courtly public would identify itself with the nobility or with Federico – Calderon himself came from the world of the secretaries –, the repartition of the attitudes toward cryptology in the play reflects the cryptologic sensibility of the court in real life: mastering the art of secret messages, or at least considering it as normal, was the correct attitude to have, while considering it as a supernatural power was a mark of ignorance¹³.

5 Conclusion

Such a small paper has no revolutionary pretentions. Focusing on mundane cryptographic practices, this article did not explain the conduct of any war, nor any diplomatic conundrum. Actually, the empirical findings are as important regarding the history of mnemonic knowledge as the history of cryptography. Nevertheless, the methodology displayed should complement the social history of cryptography promoted by Benedek Láng. Studying mundane cryptographic practices, realized by non-elite people, through the analysis of non-theoretical and non-political sources, is a key to understanding how cryptographic knowledge circulated in the Early Modern society, how it was perceived by the contemporaries (or, more precisely, how the different techniques were perceived by different groups of people) and, overall, to discover who used secret writing and why.

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13 The analysis of *El secreto de las voces* comes from Aichinger and Kroll (2011), Kroll (2014), Aichinger *et al.* (2015).

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Appendix A. Döbel/Lübbern's cipher.

Döbel's cipher works thanks to two consecutive substitutions. Firstly, any letter is substituted with a one- or two-digits number¹⁴:

Letter	bedeutet	Number
a	_____	10
b	_____	1
c	_____	2
d	_____	0
e	_____	11
f	_____	3
g	_____	4
h	_____	12
i, j	_____	13
k	_____	14
l	_____	5
m	_____	6

Letter	bedeutet	Number
n	_____	7
o	_____	15
p	_____	16
q	_____	17
r	_____	8
s	_____	9
t	_____	18
u, v	_____	19
w	_____	20
x	_____	21
y	_____	22
z	_____	23

[Figure 2. The substitution of the letter in plain text into numbers]

In the example provided by Döbel, "Hüte dich, man wird dich fest setzen" ("Take care, they are going to get you"), the result is as follow

12. 19. 18. 11. | 0. 13. 2. 12. | 6. 10. 7. | 20. 13. 8. 0. |
 0. 13. 2. 12. | 3. 11. 9. 18. | 9. 11. 18. 23. 11. 7. |

[Figure 3. "Hüte dich, man wird dich fest setzen"]

Then, each digit is substituted by a consonant, and vowels are added. This last substitution was of common use amongst 17th and 18th German mnemonists to substitute numbers (mainly dates) by letters, forming words, and memorizing them. This second substitution uses the same cipher than the first one (b = 1, c = 2, etc.).

BpC BoS BâR BuBe | Do BuF aCu BpC | iM BaD aN |
 1 2. 1 9. 1 8. 1 1. | 0. 1 3. 2. 1 2. | 6. 1 0. 7. |
 CaDo BaF uR Da | Du BpF Cui? BaC | aF BiBe Sau Beer |
 2 0. 1 3. 8. 0. | 0. 1 3. 2. 1 2. | 3. 1 1. 9. 1 8. |
 aaS BeBe BpR CaF aBiB Nx |
 9. 1 1. 1 8. 2 3. 1 1. 7. |

[Figure 4. Second substitution]

The resulting syllables form the final enciphered message.

¹⁴ The three figures are coming from a copy of Döbel's 1707 *Collegium Mnemonicum* from the Fondo Young sulla memoria e la mnemotecnica, Università degli Studi di San Marino (n°41).