

A Homophonic Substitution in the Archive of the Last Great Pensionary of Holland

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Abstract

In the archive of Laurens Pieter van de Spiegel, a Dutch politician in the years shortly before the French Revolution, a message in cipher was found. This message is solved and is shown to throw light on the important events that in 1787 restored the ruling house of Orange to full power.

Cryptanalysis can be an important tool for the historian of what R.R. Palmer has called “the Age of the Democratic Revolution.” This period, starting with the American War of Independence in 1776 and culminating in the French Revolution of 1789, gave birth to political reform movements everywhere in the Western world, laying the very fundamentals of most political institutions we know today[1]. These years, with all their social and political turmoil, saw a very intensive use of secret writing indeed. David Kahn gives in “The Codebreakers” several examples of secret writing during the American War of Independence[2]. Without any effort many others can be added from the countries which took part in the reshaping of Europe during the years thereafter. Unsolved, these messages can complicate historical research. The archives of the period, usually well preserved, are crowded with coded documents, some of them still to be solved. This applies also to Dutch archives. Around 1780, Holland, or rather the loose confederation of states called the Republic of the United Provinces and roughly consisting of the territory now belonging to the Kingdom of the Netherlands, saw the rise of a political reform movement that wanted to end the oligarchical rule of rich merchants and bankers so typical of Dutch politics.

This so-called “Patriot Movement” gradually developed a political program that called for direct representational government. On this basis it succeeded in attracting a growing number of followers not only in Holland

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but in other parts of the country as well. It had taken power in the most important Dutch towns by 1785, the direct cause being the humiliating military defeat by the British in a war between the great colonial powers that secured the American independence.¹ This defeat was due to the poor state of the Dutch army and fleet, for which the Dutch Stadtholder William V was held responsible.

The Stadtholder was formally a military commander in the service of the highest body in the republic, consisting of representatives of the provinces, the States-General. In reality he was a semimonarchical figure, politically highly independent and occupying his position as a birthright. This position had been held for 200 years by members of the House of Orange, which today occupies the Dutch throne.

The patriots concentrated their criticism on the position of the Prince of Orange but their reforms struck at the very roots of the power structure in the Dutch towns. Not surprisingly those who had a lot to lose tended to side with the Stadtholder. This was particularly true during the last phase of the patriot takeover, when the movement became more radical. They were gradually organized into a conservative party that in the end removed the patriots from power with the help of British and Prussian support. The issue was decided in September 1787 when a Prussian army invaded Holland in order to restore the old constitution. Many patriots had to seek refuge in France, only to return seven years later when Holland was overrun by a French revolutionary army[3].

The archives of the most important persons of this period in Dutch history, Orangists and Patriots alike, are richly endowed with coded material. Without any doubt this has something to do with the fact that the struggle for democracy took more or less the form of a civil war, in which letters could be intercepted easily and in which it was difficult for each side to tell who could be trusted and who could not.

An archive particularly interesting in this respect is that of the last Great Pensionary of Holland, Laurens Pieter van de Spiegel (1737 – 1800). The Great Pensionary, formally only a servant of the Provincial States, directed much of its foreign policy and fulfilled a political role second only in importance to that of the Stadtholder. The appointment of L.P. van de Spiegel was a reward for the part he played in the Orangist counter-revolution of 1787.

¹This war, lasting from 1776–1784, was fought between Great Britain on the one side and the United States, France, Spain and the Dutch Republic on the other side; the other maritime powers keeping an armed neutrality in order to prevent the British from controlling shipping. Dutch participation lasted from 1780–1784. In Dutch history writing this war is known as the Fourth Anglo-Dutch war.

Then a Pensionary of the Province of Zeeland, he took the decisive step of bringing back the army and fleet under the command of the Stadtholder. Moreover, he worked in close co-operation with the English ambassador at The Hague, Harris, to build up the Orangist party.

From a modern perspective Van de Spiegel can easily be misjudged. He was anything but a staunch reactionary. Once in power he did everything he could to improve the government finances and the organization of the army and the fleet. Unlike many of his contemporaries he rightly perceived that this could only be done by further strengthening some form of central authority. The Dutch patriots did not approve of this idea at all. If they had had their way, the Dutch Republic would rapidly have disintegrated into a number of small city states. In that respect they were far less modern than their Orangist counterparts. Furthermore, they did not speak for the entire population as they claimed but for certain segments only. The Orangist party could claim large popular support as well[4].

Van de Spiegel had been making elaborate use of secret writing in Zeeland, when he helped with preparing the Orangist counter-revolution. The letters sent to or received from the court of the Stadtholder, then residing for reasons of security at Nijmegen, had to pass through territory controlled by the patriots. Much of the correspondence of the court was conducted in cipher, particularly if it was politically or militarily relevant. The cipher keys were devised by the secretary of the Stadtholder, who handed them over to the fighters for the Orangist cause when they were visiting[5].

After 1787, when Van de Spiegel was in charge of foreign affairs in Holland, he made use of various systems: nomenclators for use in his correspondence with Dutch ambassadors abroad and simpler systems for the exchange of messages with private political informers, whether spies or real friends. The nomenclators were comprised of several thousand code groups and six to ten equivalents for each of the simple characters and often recurring character groups.

Van de Spiegel said he received hundreds of coded letters every year[7]. It took a professional, the so called cipher clerk, to translate them back into plain language. This cipher clerk also devised the new nomenclators when the ambassadors were leaving[8]. The other task of the cipher clerk being the solution of the letters being sent home by the Prussian and French ambassadors at The Hague.

The weakness of such a scheme, of course, lays in the fact that it requires a professional who might be politically unreliable or who could be bribed. As a matter of fact the cipher clerk employed by the Great Pensionary, Mr Croiset,

championed the patriot cause. This was very well known already during the war with England in the early 1780s. It was not until 1788, however, that Croiset's political reliability became a matter of debate. In that year the French ambassador stopped sending his letters by ordinary mail and started using a courier of his own instead. Instantly Croiset was accused by a close co-operator of Van de Spiegel of having revealed the secret of the Black Chamber to the French, either directly or indirectly by telling his patriot friends[6]. In the end the accusation was dropped, but some doubt on his political loyalty remained throughout the entire Restoration Period. In January 1795 when the Dutch Republic was on the edge of defeat against a French revolutionary army and when the Great Pensionary made his final diplomatic moves to negotiate an armistice, Croiset was even temporary removed from office[9].

603 607. 617 625 619 611 604 619. 612 604 607 624.
 602 600 618 621 604 624. 635 606 616. 603 609.
 612 609 604 624. 141. 620 629 607 624. 613 607—
 627 626. 611 604 631 615 602 612 627 613 611 626.
 614 622 618 607 619. 622 619 613 607 624 612—
 625 630 603 607 619. 613 619. 612 607 627.
 603 615 607 621 626 627 604. 629 609 624 627—
 624 622 632 631 604 619. —————

612 634. 635 606 616. 600 621 621 610 624 609 619 627.
 600 606 619 626 627 606 600 619 603 604. 626 606—
 627 630 624 603 600 611. 618 607 627. 626 602 612—
 613 621 621 607 624. 603 615 619 611 609 618 610—
 619 626. 606 608 614 622 625 618 604 619.
 125. 603 609 619. 25. 617 628 616 634. 161.

Figure 1: *Reproduction of the cryptogram (size reduced to 66%).*

The second type of cipher, those which he used in his correspondence with private political informers, did not have this weakness: they were devised by the Great Pensionary himself. Albeit much simpler systems, they were

used very selectively. Moreover, Van de Spiegel was well aware of more sophisticated methods of enciphering. Put in jail by the French occupiers, he even amused himself drawing a Vigenère and variants of it, as well as a bigraphical system[10].

Now we take the reader along the path to the solution of the cryptogram we found in the archives of the Great Pensionary. The encrypted message that concerns us here was found in a folder of miscellaneous letters, not uncommon in any archive.² Of course, it was difficult to know anything in advance about its importance. It came to us without external characteristics, not even a date, place of origin or sender. Only after its solution did we start a specific search of its meaning and its origin. So there were no clues as to the nature of the system or to the language of its message other than contained in the cryptogram itself. However, to make a guess at the system is not that difficult. Look at the frequencies in figure 2. Nearly all of the 153 figure groups are trinomes in the 600's from 600 to 635. These 36 trinomes are considered too few to accomodate something more involved than a monoalphabetic substitution with homophones for the most frequent letters. The other four groups — 25, 125, 141 and 161 — clearly play the role of genuine code groups; most probably names of places and names of the dramatis personae.

25 /	606 ///	616 ///	626 ///
125 /	607 /// ///	617 //	627 /// ///
141 /	608 /	618 ///	628 /
161 /	609 ///	619 /// /// ///	629 //
600 ///	610 //	620 /	630 //
601	611 ///	621 ///	631 //
602 ///	612 ///	622 ///	632 /
603 /// ///	613 ///	623	633
604 /// ///	614 //	624 /// ///	634 //
605	615 ///	625 ///	635 //

Figure 2: *Frequency count of cryptogram.*

²We are indebted to Mr. Huybrecht and Mr. Kaajan of the Rijksarchief Zuid-Holland for drawing our attention to this letter.

Furthermore our attention is quickly attracted by the dots sprinkled all over the cryptogram occurring between some of the figure groups. Besides these, we note the dashes at the end — and only at the end — of some of the lines. One is tempted to identify the dots with word separators and the dashes with words continuing on the next line.

Now we have to decide in what language the message is. The background of Van de Spiegel forces us to take Dutch, French and even English and German into account. However, the first two of these are the best candidates: Dutch because it is Van de Spiegel’s mother tongue and French because of his interest in the patriots that fled to France in 1787 and on whom he kept a watch. In figure 3 we present the statistics of the word lengths. The relatively large proportion of long words (out of 27 spelled words 9 have 8 or more letters) leads us to believe the language is Dutch. We will base our analysis on that assumption.

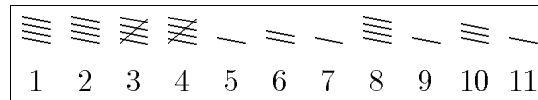


Figure 3: *Statistics for number of groups between dots.*

As always, the biggest problem is to make the first break. Standard techniques for monoalphabetic systems — as for example the consonant line — are hindered by the possible occurrence of low frequency vowel substitutes. Here we will use the word endings as our wedge into the cryptogram. In figure 4 the trinomes at the end of the longer words are presented (last group of the word is on top). The trinome 619 plays a prominent role here. In fact it appears in 7 out of 14 occurrences at the end of a word. In the Dutch language this makes it an excellent candidate for the N. Just ahead of it would be the high-frequency letter E, preceding it very often in word endings. Undoubtedly the group 604 stands for E.

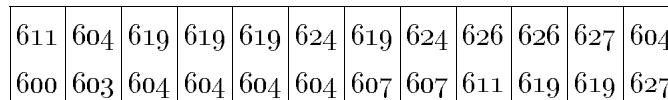


Figure 4: *Long word endings; last trinome on top, next to last at bottom.*

We also note the combination 607619. The trinome 607 is prominently found in the next to last position of a word; it happens in 7 out of 11 cases.

Obviously we have another substitute for E here. At this point we also supposed 624 to be another group for N. And although later on this conclusion proved to be false, it didn't hinder the analysis.

													604		
													607		
				603	609					612	613				
A	B	C	D	E	F	G	H	I	J	K	L	M			
													619		
													624	626 627	
N	O	P	Q	R	S	T	U	V	W	X	Y	Z			

Figure 5: *First assignments to the key.*

Next we direct our attention to the short words. The message starts with 603 E. Almost certainly it is the article DE. And if our initial assumptions are correct, then the 14th word 613 N can only be IN. We are hot on the trail now and after IN spot the combination 612 607 627, for which HET would be a good guess. Thereafter the 10th word 613 607 627 626 = IET 626 must be IETS.

At this point in the analysis we take a look at the substitution table to see if some sort of substitution scheme emerges. The assignments made thus far are presented in figure 5. A system indeed emerges. The values of the trinomes increase in the same direction as the alphabet. We are on the right track!

It is easy going from here. We extend IN HET to IN HET DIEPSTE and find the P plus another value for I. At this point our assignation of 624 to N breaks the regular progression of group numbers in the substitution table because P is represented by 621. We reconsider our previous decision here and reassign 624 to the better fitting R.

Figure 6 shows the solution as far as it has progressed up until now. There is not a shadow of doubt that the solution has been attained. More words suggest themselves quickly: e.g. ONDERHOUDEN in the first sentence, SCHIPPER in the second one.

The final key is presented in figure 8 and the deciphered cryptogram in figure 7.

A fairly literal translation of the result:

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D E . 617 625 N 611 E N . H E E R . 602 600 618 P E R . 635
606 616 . D E . H E E R . 141 . 620 629 E R . I E T S . 611 E
631 I 602 H T I 611 S . 614 622 618 E N . 622 N D E R H
625 630 D E N . I N . H E T . D I E P S T E . 629 E R T R
622 632 631 E N .

H 634 . 635 606 616 . 600 P P 610 R E N T . 600 606 N S T
606 600 N D E . S 606 T 630 R D 600 611 . 618 E T . S 602 H
I P P E R . D I N 611 E 618 610 N S . 606 608 614 622 625
618 E N . 125 . D E N . 25 . 617 628 616 634 . 161 .

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Figure 6: *First batch of values substituted in cryptogram.*

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D E . J O N G E N . H E E R . C A M P E R . Z A L . D E . H
E E R . 141 . O V E R . I E T S . G E W I C H T I G S . K
O M E N . O N D E R H O U D E N . I N . H E T . D I E P
S T E . V E R T R O U W E N .

H Y . Z A L . A P P A R E N T . A A N S T A A N D E . S
A T U R D A G . M E T . S C H I P P E R . D I N G E M
A N S . A A K O O M E N . 125 . D E N . 25 . J U L Y . 161 .

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Figure 7: *Final solution of cryptogram.*

The young master Camper will see master 141 about something important in the deepest secrecy.

He will apparently arrive next Saturday with skipper Dingemans. 125, the 25th july. 161.

Now, what can be learned from this solution? The first conclusion can be derived from the cipher code itself. It is far too simple to be of the making of the cipher clerk Mr Croiset. So the message must have been written before Van de Spiegel was appointed Great Pensionary of Holland or else written by one of his private informers, for which he drew the code himself. At first we suspected the originator of the message was Etta Palm, a lady of somewhat doubtful reputation who spied for Van de Spiegel on the patriots, who after the tumultuous events in 1787 had sought refuge in Paris. The collection of papers belonging to the Great Pensionary, however, showed that this cipher was used in three more letters, all written during the summer of 1787 by W. van Citters[11]. Mr. van Citters was an important nobleman from Van de Spiegel's own province of Zeeland. He was an experienced politician who

600				604									
606				607				613					
608				609		611	612	615	617	614	616	618	
610	602	603											
A	B	C	D	E	F	G	H	I	J	K	L	M	
	620							628					
	622							630					
619	625	621		624	626	627	632	629	631		634	635	
N	O	P	Q	R	S	T	U	V	W	X	Y	Z	

Figure 8: *Final values of the substitution key.*

had represented the Province of Zeeland in London and who had represented the Stadtholder on some other occasions. In the period under surveillance he was serving as a “secret secretary” to the Stadtholder at Nijmegen[12]. This then must have been the author of our secret message, that can now be dated as well: July 25th 1787.

Next we turn to the content of the message. The actual text does not tell us much but it gives us two surnames that somehow relate to one another. Furthermore, the phrasing gives some clues not directly manifest to the modern reader. Firstly, the phrase “jongen heer” should in this context certainly not be taken for granted. In the Dutch language of the time it is used only for the sons of upper class families.³ This narrows down the possibilities considerably. Moreover, the young Camper must have been already known to both Van Citters and Van de Spiegel, so we are probably dealing with the son of someone not too far removed from the Court.

In that case the young man referred to in the message is very likely to be a son of Petrus Camper, a famous medicine and biology professor at several Dutch universities. Professor Camper was a much appreciated guest at the Court because of his interest in the biological and zoological collections of the Stadtholder[13]. Furthermore he was a staunch supporter of the Orangist cause. In the early 1780s, as mayor of the Frisian town of Workum, he tried to prevent the Frisian Stedenkwartier⁴ siding with the patriots[14].

³We are indebted for this information to Mr Joost Rosendaal from the Catholic University of Nijmegen.

⁴The highest government body in the province of Frisia was divided into four so-called quarters that met separately. These quarters were: Oostergo, Westergo, Zevenwouden

In the summer of 1787 he became a member of the State Council at The Hague. In this position he did his best to keep the Stadtholder in Nijmegen as well informed as possible about what was going on in this important government body. Interestingly enough, the letters he wrote in these months to the Stadtholder's wife, the princess Wilhelmina, show that Camper was well acquainted with the plan for a Prussian military intervention. He even forwarded ideas about the cities that should be taken first[15].

Our only problem is we don't know which of Camper's three sons is mentioned in the message. At the time one was staying in southern France, writing back home enthusiastically about the geological samples he was collecting. Another one was living in London, and the third was living at The Hague[16].

Next the name "Dingemans" comes into play. The wording of the phrase "met schipper Dingemans aankomen," suggests that we are dealing with the captain of a ferry boat providing a more or less regular service between destinations. Secondly, Dingemans is a name very typical of Zeeland[17]. The first thing we checked was whether the point of departure could be Middelburg in the province of Zeeland. This would point at L.P. van de Spiegel — who lived at Middelburg — as the gentleman to be visited by young Camper and would also account for the fact that the message was to be found in his archives in the first place.

A glance in a Middelburg almanac showed that we had guessed right. There we found mention of a captain "Dingeman Dingemans" leaving every Friday for Delft and The Hague[18]. This must be the man we are looking for because he was likely to be returning on a Saturday, the announced day of arrival of our young master Camper. Needless to say, this points to the son who was living at The Hague.

So much for the interpretation of the actual message. The remaining questions, of course, pertain to the contents of the conversation that would take place, the identity of the man who sent young master Camper and the role of the message in Dutch history.

The answer to the second question related to the man who sent Camper to Middelburg can be most easily guessed at. We are probably dealing with the English ambassador Harris, who played a very active role in organizing the counter revolution and who is known for having had his messages delivered by loyal supporters of the Orangist cause[19]. This, combined with the date of the enciphered message, gives us a clue about the subject of the intended

and Stedenkwartier. All quarters represented a certain region, except the Stedenkwartier, being a representation of the eleven towns in the entire province.

conversation as well. On July 20th of that year Harris wrote a letter to his colleague at Berlin, in which this British ambassador was told that Britain would declare war on France if it should try to prevent a Prussian intervention by military means. This was important news indeed because until then the British Cabinet had not made up its mind on this subject[20].

Finally, what can have been the influence of this conversation on historical events? Of course, in this respect the evidence is not conclusive but one thing is certain. Shortly after the conversation must have taken place, on July 31st, the Staten van Zeeland⁵ commissioned Van de Spiegel to open negotiations with those of Utrecht and Gelderland to restore to the Stadtholder the command of the entire Republican army[21]. This was an important step in the development toward a military confrontation with the patriots[22]. Not long thereafter, in September 1787, the Prussian king, brother-in-law of the Stadtholder, intervened by sending an army of 20,000 men into the Dutch Republic. It restored the Stadtholder to full power. He in turn appointed L.P. van de Spiegel Great Pensionary, who thus became the highest ranking civil servant.

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⁵“Staten van Zeeland” is what the highest council of the province of Zeeland is called at the time.

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⁶We owe this reference to Mr. A. Wiggers from the “Zeeuwse Bibliotheek” at Middelburg.

⁷We are indebted to drs. B. Woelderink of the Koninklijk Huisarchief for this remark.