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# **Diachronic trends in Homeric translations**

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### Abstract

In this paper we intend to present a tool we developed for translation studies and diachronically compare various French translations of the *Odyssey*.

This field of study is part of the more general "Classical Receptions" studies that try to analyse the influence and adaptation of classical texts in modern and contemporary literature, theatre, cinema, and many other artistic fields. While Greek texts have been analysed by scholars for more than two thousand years, research about classical translations is not yet a most renown subject. In recent years this theme has raised a growing interest in the academic community.

We developed a program that can align textual sequences (defined as groups of words delimited by a specified grammatical pivot, in our case proper nouns), without need of previous training. We obtained alignments for many different kinds of translations<sup>[1]</sup>. While other programs have an upper bound for one-to-many alignments (for example with a maximum of four translated elements aligned to the same original element) this algorithm allows an indefinite number of alignments, both for the source sequences and the target ones. The aligner is based on an implementation of Needleman-Wunsch algorithm and on a string-based similarity approach to textual segments. The aligner needs to establish proper names as anchor words, as they are a relatively stable feature through different translations and tend to be similar in several languages.

Thanks to the alignments obtained using the program, we can explore translations in a number of ways. We will illustrate the creation of a graphical interface to visualize French Homeric translations.

With our tool, it is possible to highlight aligned portions of texts and show their immediate differences or similarities, both in meaning and in syntactic distribution.

We will show some resulting syntactic analyses carried out on a small sample of texts, taken from a corpus of twenty-seven unabridged French translations of the Odyssey and explore how the study of diachronic translations through algorithms of computational linguistics can produce interesting results for literary and linguistic studies.

# Background

The *Odyssey* can be considered as one of the major pillars of modern literature. It has been translated in all major Indo-European languages for many centuries. We created a digital corpus of fifty French translations from the 16th century to the 20th for a total of 207 translations and reprints. In this paper we shall try to demonstrate how trends and literary movements could be analysed using the immediate statistic results and visualizations that we obtained with our tool. This paper will focus on a sample of the whole corpus.

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This paper focuses on the XIth book. This book is a very well known episode of the *Odyssey*, often called the *nekuia*, containing a dialog with the dead (slightly different, for example, from the *katabasis*, an actual descent into Hell). It is also a key episode for translators. In France, from the 16th to the 20th century, the three most translated books were the

Ist, the VIth and the XIth. Throughout our research, we have identified three kinds of translations: translations made for schoolastic readers who specialize in Ancient Literature, translations made for school use, for students who need to learn about Greek Literature and translations that appear as a kind of stylistic exercise, and often an echo or an announcement of future works. The XIth book is also interesting because every translator who chose to translate it went on to translate the whole of the *Odyssey*. It often seems to be a trial book, a book to test and improve literary skills and style. As a result, we could sketch the translator's virtual portrait: every single translator of the XIth book has, sooner or later, devoted himself to defending the literary value of Ancient Literature, and more precisely, every one of them has seen in the Ancient corpus a source for inspiration, a stylistic potential to unravel. That is why this particular book was chosen.

Concerning the Greek pivot text, it is based on the Greek text established by Allen and Monro [Monro 1902], as it is the most widely used representation of the Greek text, both before and after the 19th century. Monro and Allen are also most familiar with the whole vulgate around Homer, and include many variants from Eustathius, often considered as the most precious source for reconstructing Homeric epics in Greek (since the *princeps* edition of his commentaries in 1542).

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To analyse trends or literary tendencies, the use of alignment and post-processing algorithms appeared as a novelty. Many works already have been made on aligning translations to their original texts (see for example [Déchelotte 2007]; [Brown 2003]; [Gale 1991]) but they focused on synchronic, non-literary corpora. In literary studies, on the other hand, the necessity of textual alignment appeared for two reasons: scholars wanted to evaluate a translation by considering its source and to create a possible alternative to that translation. As a result, the translation itself as a work of art remained underestimated. Aligning translations gives the art of translation its rightful place: an authentic literary experience, considering the translation itself as an object of art and study. We therefore decided to focus on dividing and aligning each translation, in order to identify possible stylistic trends and possible echoes of the literary world of the translator.

# **Automatic Alignment Method**

Since segment alignment is widely considered a necessary step in order to proceed toward any kind of word alignment attempt [Allauzen 2009]; [Gao 2008]; [Gao 2011], using a good global aligner is regarded as an important prerequisite for many studies about automatic translation.

To align our translations to the original text we wrote a Java implementation of the Needleman-Wunsch algorithm<sup>[1]</sup>. The Needleman-Wunsch algorithm [Needleman 1970] was originally designed to align the amino acid sequences of two proteins. This algorithm is expensive in terms of computational complexity and efficiency of the procedure but remains a tool of the highest quality to perform global alignment.

There have been several attempts to adapt the Needleman-Wunsch algorithm for use in the field of text processing and digital humanities. To cite some of the most recent cases, it has been used to perform phonetic alignments in historical linguistics (see [List 2013] for an overview), to perform character-based detection of text similarities [Gomaa 2013], to validate claims of structural affinity in narrative [Reiter 2014] and to detect similar URLs [Germann 2016]. It is sometimes used in tasks of monolingual text alignment in combination with other systems [Nelken 2006]. Since the algorithm in itself is designed to globally align sequences of any kind, its implementations are different in every case. What changes is usually the tokenization of the sequences, (these can be divided in letters, words, or textual blocks as we see here), and the similarity score used to decide whether two elements should be aligned or not.

In our case, we re-purposed the Needleman-Wunsch structure to align bilingual portions of text. Through the process described in the following pages we globally aligned the XIth book of the *Odyssey* with several translations. Such an alignment allows several types of statistical valuations impossible to perform otherwise: these include an analysis of how far the translations deviate from the original, quantify the cases of lacunary texts and start building word-to-word alignments that might show the variations of preferential translations through time. At the least, such a tool can help a scholar finding quantitative data to support or dispute a translational claim.

been no previous application of the Needleman-Wunsch algorithm to translation alignment and diachronic translation study.

Simply put, the Needleman-Wunsch algorithm tries to align two sequences of comparable length. Given that each sequence is divided into an arbitrary number of elements, such as words or letters for a sentence, the task of the algorithm is to optimally match the elements of the two sequences.

To perform this operation the algorithm records each possible match between the elements of the two sequences in a grid-like structure, and assigns a score to each combination. This score is usually computed through a matching rule: for example, two identical words are a better match than two totally different words. The cost of leaving a gap if the system doesn't find any good matches for a sequence's element is also taken into consideration. Once this grid is built and filled with scores, the algorithm is able to trace back the optimal (e.g. least expensive) path through it, as can be seen in Figure 1.

An "ideal" path would be a perfect diagonal, and the algorithm tries to diverge the least from such a path, given the differences between the sequences and the similarity heuristics it uses. This process results in the optimal global alignment of the sequences.

Figure 2 shows an example of global alignment of two strings performed through the Needleman-Wunsch. If an element could not be aligned, the algorithm will insert a *gap*.

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Since we study translations of comparable length, this approach seems reasonable. As we will detail later, we pass to the algorithm our texts divided in small blocks and we provide it with an ad hoc similarity function. We perform the alignment twice, so that we are able to refine the similarity function for the second alignment through the results of the first alignment. The result is a sequence of small, aligned blocks in one or two languages that can be used as a basis for in-depth quantitative analysis of translation corpora.

H 0 E 0 G 0 A 0 W 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0 C				0 1 1 1 1 1 1 1 1 1 1	$0^{0}$ 1 2 2 2 2	0 <sup>0</sup> 1 <sup>0</sup> 2 <sup>0</sup> 3 <sup>1</sup> 3 <sup>0</sup>	0 <sup>0</sup> 1 <sup>0</sup> 2 <sup>1</sup> 3 <sup>0</sup>
H 0 E 0 A 0 G 0 W 0			0 0 1 1 1	1 1 1 1 1 1 1 1	$1^{0}$ 2 $2^{0}$ 2 $2^{0}$	1 2 3 1 3	1 2 3
E 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 <sup>0</sup> 1 <sup>1</sup> 1	0 1 1	1 0 1 1 1	$2^{1}$ $2^{0}$ $2^{0}$	2 <sup>0</sup> 3 <sup>1</sup>	2 <sup>1</sup> 3 <sup>0</sup>
A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1 1 1 1	1 0 1	1 0 1	2	3	3
G 0 G A O G		1	0 1	0 1	2	0	-
A 0 0	0 0	1			-	3	3
w o	Ŭ	1	0 1	1	2	3	3
0 0	0	1	2 1	2 0	2	3	3
GU	0	1	2 0	2 0	2	3	3
но	0	1	2 0	3	3	3	3
E 0	0	1	2 0	3 <sup>0</sup>	4	4	4 <sup>1</sup>
E O	0	1	2 0	3	4 <sup>1</sup>	4 <sup>0</sup>	5 1

Figure 2. An example of a Needleman-Wunsch alignment of two strings

In our case, the main problem was the necessity to align long and non-segmented texts with translations that are often noisy, literary and inaccurate. Furthermore, Homeric poems are not divided on a small scale: rhapsodies are hundreds of lines long and episodes can be undetermined.

There is a variety of elements that can be used as anchors in a text. The best anchors are high frequency words, when the original and its translation are very similar; or low frequency words such as technical terms, if we are sure they will always be translated in the same way or within a very reduced number of variants. Numbers can also act as anchors if they are always translated in the same way.

However, in the case of Homeric translations, these pivots are not reliable. We can find many kinds translations of the Homeric text, with many types of periphrasis, interpolation, and stylistic compromises. For example, many translators thought that repetition was a reprehensible stylistic feature and consistently used synonyms or periphrases where the original text had simply the same word repeated twice: so high frequency nouns or verbs could be unreliable. Other translators could do just the opposite, making low frequency words unreliable. These variations in translation style made choosing appropriate anchors problematic as traditional approaches were difficult to apply (for more traditional approaches see [Gomaa 2013]; [Ma 2006]; [Nelken 2006]; [Och 2003]; [Och 1999]).

Also, we didn't have a "training dataset", as often happens in other cases of translation alignment, since there was no existing corpus of aligned Homeric Greek - French texts. Even if such a corpus existed, it would have been unreliable due to the compromises that different authors made while translating the text. Additionally, as this is a diachronic study on literary translations, even a Greek - French dictionary of anchor pairs would have hardly been useful.

For these reasons, in order to segment our texts and their different translations we chose to use proper nouns as anchor words. Proper nouns are a relatively stable feature in Homeric translations. In fact, even the translations which differ most from the original text tend to maintain the Greek proper nouns. It is possible to look through many different translations and find that proper nouns tend to remain phonetically similar with their Greek source, as can be seen in Figure 3.

Source					Target		
<b>Μέντορι</b> αὐδήν.	εἰδομένη	ήμὲν	δέμας	<b>ἠδ</b> ὲκαὶ	Ayant pris les traits et la voix de <b>Mentor</b> ( <i>Bitaubé</i> )		
					Elle a pris et la taille et la voix de <b>Mentôr</b> ( <i>Lebrun</i> )		
					Empruntant les traits et la voix de <b>Mentor</b> ( <i>Dugas-Montbel</i> )		
			Semblable à <b>Mentôr</b> par la figure et la voix ( <i>Leconte de Lisle</i> )				
					De <b>Mentor</b> , elle avait et l'allure et la voix ( <i>Bérard</i> )		

Figure 3. A proper name used as anchor: stable element through different translations

We decided to use proper nouns as pivot for segmenting our text. A source sequence is defined as a list of words beginning with a Greek proper noun stopping at index-1, index being the location of the following Greek proper noun; a target sequence is a list of words beginning with a French (or any target language) proper noun, stopping at index-1. However, proper nouns are not completely reliable: duplications, interpolations, substitutions or unusual translations happen in the onomastic field too. As a result rare proper nouns tend to be more reliable pivots while frequent proper nouns should not be given the same importance for the alignment. Once the sequences have been defined, the alignment can begin.

We first create a dictionary of anchor words. The Greek nouns are transformed according to historical linguistic rules that produced French modern proper nouns from their source Greek ones. For example, in  $A\chi \alpha i \delta \varsigma$ ,  $\alpha i$  is reduced to e, and  $\chi$  transcribed as  $ch^{[2]}$ . Once the Greek noun has been transformed, it is compared to its possible translation considering the edit distance between the two. If the distance is small, the target value is considered as a translation of the source key. A map <String, String []> is therefore created, with a key for the source text and a list of translations for the target texts. The dictionary is cumulative and allows to add every possible value of every possible target text to a single source key. A possible representation of this map could be:

Example 1. To each lemmatized Greek name correspond several potential French values.

This dictionary will allow us to increase or decrease the potential similarity between two sequences. The alignment process can now begin.

As we briefly explained at the beginning of the paper, the first step is to create a 2D matrix where all the sequences are stored: the source sequences are stored in the columns (each sequence is stored in each column), the target sequences are stored in the lines (each sequence is stored in a different line). To align the elements of the series, it will be necessary to choose a scoring system. A basic scoring system can be thus summed up: if a source element at index *i* and a target element at index *j* are equal (two identical letters, two similar numbers, etc.) the score stored in the matrix at index *ij* is 1, otherwise 0.

Our way of establishing scores between sequences is similar, but more selective. We use many similarity metrics already well known that we implemented for our own purposes, such as the Monge Elkan distance, the Levensthein distance, the Jaro-Winkler distance, or the Hamming distance<sup>[3]</sup> on both the transformed Greek and the tags associated with each word (both in French and Greek). The sequences carry their morphological information: each verb in Greek is associated with a VB tag, each noun with a NN tag, etc. and so is the target sequence. It therefore possible to take into account the syntactic similarity between the source and the target. Yet again, this is far from being the only similarity measures we use. The similarity is also determined by the frequency of the proper nouns used both in source and in target sequences. Since the frequency of proper nouns, like that of words in general, follows a Zipfian distribution, we give to proper nouns a similarity score which is inversely proportional to their frequency. If a low-frequency noun appears in Greek, and if its potential translation can be found in its potential matching sequence, the similarity is much stronger. We also take into account the absolute distance between two sequences. If a very short sequence is associated with a very long one, the score between the two is very likely to be low. Finally, another essential similarity measure can only be performed once a first alignment has been produced. In a second alignment, as we will see, we can take into account the distributional semantic similarity between words.

When this process is done, we have a list of aligned chunks, with gaps when the Needleman-Wunsch found no possible alignment, as in the example in Figure 4. The chunk  $M \epsilon v \tau \omega \rho$ ,  $\delta \varsigma \dot{\rho}$  ' hasn't found a good alignment and was thus paired with a gap.

Source	Target
Λειώκριτος ἀντίον ηὕδα	Léocrite, lui répondit
Μέντωρ , ὄς ῥ '	۸

Figure 4. Example of block alignment with a gap

Three post-processing steps are then performed. First, we remove all the gaps from the source text. For example, if at the same index both the source sequence and the target sequence are gap characters, the index of both lists is removed. If the source sequence is a gap while the target one is not, the source sequence is removed. The target sequence is then associated with either the previous or the next sequence in the source text, based on which of these contains a potential match for the proper noun in the target sequence

Once this first alignment and rearrangement is done, we proceed to yet another alignment, this time taking into account the similarity between sequences deduced from our distributional semantics method.

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This step is performed through a small variation of a standard distributional semantics model. The distribution of words in the text (both original and translation) is modelled into a vector representing how many times a given word occurs in each aligned original-translation block. In this way, the contextual information which is usually taken into account in semantic spaces is removed and the co-occurrence of bilingual couples in the aligned blocks emerges with clarity. A French word and a Greek word occurring in the same sequence of aligned blocks will have similar vectors. Through this method we manage to automatically retrieve a small dictionary of word-translation pairs. Naturally, the length of this dictionary is modifiable changing the similarity threshold above which two elements are considered a word-translation pair. If the first alignment was very noisy (for example with many gap and large blocks) we will need a higher threshold to establish a meaningful correspondence, while a cleaner first alignment will allow us to relax our acceptability constraints. It also becomes evident if a text tends to use always the same translation for the same set of words, or if it translates them differently in different contexts.

To this distributional dictionary, we add a specific MGiza dictionary. Once the alignment of the corpus has been done, we use a wordtoword aligner called MGiza++, the most recent version of Giza++. As it is multithreaded, the program is much quicker, uses less memory, and the training process is more supple and modifiable. The word-to-word alignment is done in two steps: first the production of a co-occurrence tab (with the pre-implemented sent2cooc algorithm), and an alignment based on "training models" (recursively modifiable). MGiza++ uses IBM<sup>[4]</sup> and HMM<sup>[5]</sup> [Manmatha 2006] Models. These two models suggest that each word in a corpus has its own non-arbitrary place, forming potential clusters with the others, and that the position of the source and target words is highly dependent on what surrounds them.

The result is a series of aligned pairs like in Figure 5.

	Source	Target
9.1	αἱ δ' ἀγέροντο ψυχαὶ ὑπὲξ	Les âmes des morts se rassemblaient du fond de l '
9.2	Ἐρέβευς	Erèbe

'Odyssée,	chant 1 Ajouter une version	×		
High&Low I	Frequency			
Hapax Potential te	xt reuse			
1 ×	1841, Anne Bignan, chant 1	<sup>1</sup> 1842, Eugène Bareste, chant 1	X 1852, P. Giguet, chant 1	X <sup>^</sup> 1862, Émile Pessonneaux, chant 1
	1119	M1	[1]	[1]
omme sur la s d' sprit d' souffrit inir son is ; mais périrent ils etour . entures . reurs du après auts . Un , fut des , jue dans	(2) Muse, reds: mol tes périlleux hesards Du mortél qui y vanqueur de la Trois aux saints remparts. Ferneux par sa profenso. Jun deux particultures interrogen des mours el des clabs diverses. Planz conserver ses jours, sur l'abline des mers Dans son cour patient souffit mille revers. Et de sec compagnos matgré se noble enve, Parmi tant de dangers ne sauva point la vie ./Leur crime les pardit; ces coupables horbes ("Desmi tant de dangers ne sauva point la vie ./Leur crime les pardit; ces coupables horbes orde. Parmi tant de dangers ne sauva point la vie ./Leur crime les pardit; ces coupables horbes orde. Falle de la fuel de lanssa haine obstinée / Leur ravit du retour la propice journée ./Fille de la mort conjurant la futre ,/ Echapper aux pétis des mers el des combats. / Trivé de san épouse, abbent de ses étas ./ Un seul voyit au sein d' une grotte profonde /La mymphe	[2] Muse, chante ce hivros, illustre par sa produnce, qui longingmos rares sur la terre aplès avor détruit la vite sacrée de instruisit de leus meurs, et d.f. sur las mers, j proie aux plus vives suffinnes pour savures sur pours et ramener ess compagnons dans leur pati Mais, magrito tou ses efforts, il ne put les y conduire, et las patient victimes de leur improdence. Les insensés socieres tour autor troupeaux consacrés au céleste (4) sociel, eu céleste fille de (5) Judier : nocet neus quelques-unes de ces aventures. / Déjé tous les sociales journer des combast. Un sein constant de las leur patient le cruel Réu, céleant fantite dans leur patient é cours de las un céleant patient dans les grottes prodoes de la rymphe	[2] Muse , chante ce héros pient artifices qui logitamps arra lorsqui i qui trenversă la sante [3] Ilion, il visita di nombreusse scis, et comul vaste mar, des peus ser il social, sur la so ve et la ramener ses compagnons, mais il ne put les sauver, quele que fut l'ardur de ses voux; tous privent vicientes de leur perversité Les insensés. Ils dévortient les bourds du [6] Juliget, au gré de las inspirations reconte nous ces mervelles. Dúe futur avel instant du retour Deesse, fille de [6] Juliget, au gré de las inspirations, reconte nous ces mervelles. Dúe futur ser las devortent les soin de leurs demeuros. Un seul, privé encore o se parte, de son depuse, lungui chez une auguste nympte. [6] Catypo, la plus noble des déesses le retent dans des grottes profondes, et la désire pour époux. Coependent les amées se sont écoules	2) Muse, die mol ce guerrier. Recond en resources, qui erra si kongteinnos, après avoir renverse la ville sacrée de 3) Trote li vil tes créte de instruisit de leurs mours; sur la mer, il souffit son cour des peines sans nombre, dans le bu assurer et son salut et le retour de ses compagnons. Mais il ne seuva pas, même à c prix, ses compagnons, quelque desir qu' il en car lis périnent victimes e seuva pas, même à c prix, ses compagnons, quelque desir qu' il en car lis périnent victimes de leur propre folle, le insensés, qui mangérent les bœufs du Soleil, d' [4] Hypórion; et lo Dou leur ravit le jour du rett Deésse, file de [5] Jupiter, dis nous, à nous aussi, une partie des rours foyers, quittes de la guerre et de la j'Upisse seul, magré son vit désir de revoir sa partine i son épouse, d'ait refenut dans des gro
e par ers , ntre le	(c) Langisol reinploanment sail former, // [7] Calvyso qui voolati, dance set exil lointain, // Par un hymen cheri i' unir à son destin. / Lorsque des ans prescris la ocurse révolue / Amema î heure enfin par les Dieux résolue, / Où même en ses foyers, après tant de fravaux, / Le sort le condamnait à des malheurs nouveaux, / Tous ces Dieux, contempiant son arrante infortune, / La	(b) Carypao, ré prois auguste or durais nes décases, qui souhatial l'avoir pour épour. Mai lorsque dans le cours des années arma le temp marqué par les dieux pour son retour à l'[7] Ithaque, on les dieux pour son retour à encore éviter de nouveaux maiheurs, tous les immorteis le prirent en ptié, excepté (B) Neptime, qui poursurvit sans cesse de sa	<ul> <li>the territy test according table so setuct on in marging pour some refour au sent</li> <li>[7] Ithaque, ou, même parmi les siens, il doit encores solt de territoles derouves. Tous les deus sont émus de compassion en faveur du hêros, hormis</li> <li>[8] Neptune, dont la haine implacable doit poursuive le dwin</li> </ul>	[6] Cahyso, noble entre les désses, qui souhaitat de l'avoir pour époux. Mais, bien qui le cours des années etil déjà amené l'époque marquée par les dieux pour son totour dans [7] Timagu, sa patrie, il ne se voyait pas quitt encore de ses épreuves et au milieu de ses an et tous les dieux avaura pildé de lui, à l'except

Figure 6. Alignment in the main frame

It is possible to refine textual blocks by recollecting the beginning and end of their opening and closing sentences. This final step creates meaningful blocks that start and end with complete sentences, although this procedure requires some

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precaution. Figure 6 shows an example of the alignment possibilities of the interface.

The program was originally conceived with a Java interface. The application was designed to be a purely local tool. However, when the time came to show our results to a wide variety of researchers, we soon found out we needed a web interface, to address the needs of specialists in Digital Humanities and a wider range of literary researchers.<sup>[6]</sup> The whole code is open-source, on our GitHub repository, and the .jar may be compiled with the .jardesc file. The web interface, although on a different repository, is built for this program. The users input files, as can be seen in the open-source code, can be in several formats, such as .doc, .txt or .xml. During the process, the program will segment integral texts into its main components, such as chapters, parts or books (essentially with the use of regular expressions when the scheme is basic enough). For the *Odyssey*, it is segmented in books. The book-segmented texts are printed in xml files. We then apply our *NamesPatternMatcher* to create xml files with elements segmented by proper nouns. Each of these elements has its correspondent attribute lemmatized and tagged. When the alignments have been done, the output is printed in xml files with a fixed identification for each sequence, which allows us to associate it with the source, but also with its corresponding targets.

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Statistical comparison (number of occurrences of each term in the whole file, number of occurrences for this precise identification and its correspondents, etc.), phonetic comparison (phonetic similarities between source and target and between different targets) and syntactical comparison (proximity with Greek in the whole file, proximity with Greek for a precise identifier, etc.) allow us to have a clear overview of all the translations at once. The web interface we built for visualization allows us to visualize all the dynamically aligned text simultaneously. One of the features that still remains to be added to the web interface is a personal notebook for each user with the possibility of commenting on chosen aligned sequences and hyper-linking those commentaries to their specific identifiers.

In other words, the calculation capacity is not comparable to that of a human being. One would not be able to measure, for example, the exact syntactical proximity between the Greek text in regard to 50 different French translations at once. The fact that one is able to analyse multiple translations at once while focusing on extremely precise events in the texts also shows what the whole process of translation studies hints at, that one does not simply read Homer's text, but only one singular aspect of it from a particular author.

Complete transparency of translation is not possible, and that is partly what our tool shows. Although many sequences may convey the same general meaning, the way each translator illustrates his perceptions in his own style shows the reader that the *Odyssey* is not just one text, but a myriad of interpretations brought to us through translations. To fully understand this variation, close-reading is not sufficient and may easily be faulty. One may be able to make accurate statements on some correspondences between one source text and one target text, but it is highly doubtful that the human brain would be able to compare so many translations at once and get a clear view of all the relevant information. Not only is the human process slower and riskier, but it also does not allow the adjunction of all the metadata our program can take into account, such as the association of unexpected expressions or words found thanks to distributional semantics that help us visualize the evolution of different concepts through time. Finally, some scholars, such as Noémi Hepp [Hepp 1968], tend to present their own subjective judgements about various translators as objective ones, while analysing the texts through close-reading. The result is that, although Noémi Hepp might be considered as deliberately controversial in this matter, some of her assertions about translators that either she or translation critics of the time disliked are clearly (both statistically and syntactically) unjustified.

We will show a set of results obtained using the method outlined above to analyse a segment of our corpus of translations of the *Odyssey*. This analysis focuses on a specific portion of text, extracted from the XIth book of the *Odyssey* (v. 3444). In this part of the paper, we would like to give an example of what scholars may obtain using the program we made. We should proceed diachronically, and see if we can spot trends and literary tendencies through the centuries. However, every example we chose, though randomly chosen, can be compared, in our program, to the 27 translations we digitalized. Figure 7 shows how a multiple translation alignment looks in the interface and Figure 8 shows how a single translation appears to the user, with different colors highlighting some relevant elements of the text (hapax legomena, high frequency terms and so on).

### Salomon Certon

1000, Homère, chant 11 X	1604, Salomon Certon, chant 11	× ^	1716, Anne Dacier, chant 11 X	1	1777, Guillaume Dubois de Rochefort, chant 11 🗙
μεγαρον πορή τε εμπηλήμι ευσλος	[11]		en paruculier a	1.00	tenebreux je me vis parvenu, io invoquar des
[12] Τειρεσίης δέ άπάνευθε όις ίερεύω οἶος παμμέλας ός μήλον μεταπρέπω ήμέτερος ό δέ έπεἰ εύχωλή λιτή τε έθνος νεκρός λίσσομαι ό δέ μήλον λαμβάνω άποδειροτομέω είς βόθρος ρέω δέ αίμα κελαινεφής ό δέ άγείρω ψυχή ύπέκ	[12] ^ [13] Tirésie à part promets de mon troupeau / Qu'une grasse brebis à la noirâtre peau / Sera sacrifiée à luy seul, surpassant / Le reste de la terune à rede "Biethe aussent / Le reste de la		[12] Tirésias seul un bélier tout noir, qui serait la fleur de mes troupeaux. / Après que j'eu adressé à ces morts mes vœux et mes prières, je pris les victimes et je les égorai sur la fosse. Le sang coulera gros bouillons; j les ombres viennent, de	1	[12] Enfers les Ombres révérées, / Moi-même j'égorgeai les victimes sacrées, /Dans le fossé profond qu'avoient creusé mes mains. /A peine le sang coule & les bords en sont teints, /Que je vis de l'
(14) Τέρκβος νέκις καταθνήσκω νύψιφη τε ήθεος τις πολιλήτης τις νέρως παράκτικη σύ απόλός νισπτνθής θυμός ξιαο πολίς δέ οιπάω χαλικήρης έχτιξη κήτη δαμήσκος βορτάσμαι πεύχος έχω ό πολίς πτερί βόθρος φατάμι άλλοθεν άλλος θεαπταρις μάγις δια ζλυλορός όδος αίρει δη ήστε Επιπατ ετάτορος έποτρύνου κελεύω μήλων ό δή καπακείω αφάζαι γιλώς διαλικόρις όδος αίρει δη ήστε Επιπατ ετάτορος έποτρύνου κελεύω μήλων ό δή καπακείω αφάζαι γιλώς διαλικόρις όδος αίρει δη ήστε Επιπατ ετάτορος έποτρύνου κελεύω μήλων ό δή καπακείω αφάζαι γιλώς διαλικόρις δέρω κατακαίω έπειδχομια δέ θεός ιθρίμος τε [14] Άδης καί έπαινός [15] Περιστέρνται αύτιός δέ ξιδρος δέμς έρώω παρά μηρός ήμωι ού δέ έδων έλιος διαμεγικός κόρηνον αίμα δασοτα όμι πρών [16] Τεριστής πυνάθτουραι πρώτος δέ ψυχή [17] Ελιπήνου δρομομί επάσος ού γάο που θάπτω	mes view. & supplications / Apasie les esprits, for mes oblations / Jrégorge les brebis au-dessus de la fosse / De sang coulait dedans une moitre grosse. / Et du coou pun humeur noritatre distillait Lors une quantifé autour de moy volait / De simulacres vans, ceux que la mort cruelle / Avait toute force entraindes apres elle : / Les jeunes vigoureux, & les fablios vientilars / A famires Nymphees encore, & filles misérables / Que le deuil au trôpe a conduit pitoyables. / Dautres y avait là de grands coups transpercés. / De piques & de dars les estomacs blessés / Les armes tout en sang les couraint là la fosse. / Et sy précipitaient en multude grosse, / Stiflants autour de moy d'une frêle rumeur. / Tout le corps me glaca de frisson à	ait le it./ it.à s as s s : &	tous côtés du fond de l' (11) 1 cribbe On voit pêle-mêle de jeunes femmes, de jeunes hommes, des vieillards desséchés par de longs travux, de jeunes filles décéders à la fileur de l'âge, des guerriers couvert de larges biessures, victimes du dieu Mars, et dont les armes étaient encore teintes de sang. Ils se pressent tous autour de la tosse, avac des cris aigus ; une frayeur pâle me saisit. Je commande, à mes compagnons de dépoulier les victimes que favais égorgées, de les brûler, et d'adresser leurs priters aux dieux infernaux, au puissant [14] Pluton et à la sévèrre (15) Froserpine. El moi, fépée à la main, l'écarte	1	(13) Erèbe accourt sur ces rives (Des Ensans épicrés, 3 des Vierges plantimes, / Des Viellards accablés des maux qu'is ont soufferts, /Des Guerriers tout armés, à de samp tout couverts. Le peuple entier des Morts s'assemble & menvironne /La plateur me saist, mon corps tremble à frissonne. / Dans les feux cependant que je fis alumer, / No svictimes bientit alloient se consumer / Et mes Amis, chargés de ce pleux office. //Abevient, par leurs voux, ce sanglant sacrifice : /lis implorent les [14] ^ [14] ^ [16] Dieux de ces languabes bords ; /Et moi, le glaive en main, jempéche que les Morts / Ne vanemet, dues ce sang que ma main leur

Figure 7. Multiple alignments around Salomon Certon

[13] Tirésie à part promets de mon troupeau / Qu'une grasse brebis à la noirâtre peau / Sera sacrifiée à luy seul, surpassant / Le reste de la troupe ès prés l'herbe paissant. / Lorsque j'eus par mes vœux & supplications / Apaisé les esprits, fait mes oblations, / J'égorge les brebis au-dessus de la fosse: / De sang coulait dedans une rivière grosse. / Et du coup une humeur noirâtre distillait. / Lors une quantité autour de moy volait / De simulacres vains, ceux que la mort cruelle / Avait à toute force entrainés apres elle : / Les jeunes vigoureux. & les faibles vieillards / A l'environ de moy courent de toutes parts: / Maintes Nymphes encore, & filles misérables / Que le deuil au trépas a conduit pitoyables: / D'autres y avait là de grands coups transpercés. / De piques & de dars les estomacs blessés. / Les armes tout en sang : ils couraient à la fosse. / Et s'y précipitaient en multitude grosse, / Sifflants autour de moy d'une frêle rumeur. / Tout le corps me glaça de frisson & tumeur. / Et le sang me figea de peur & de misère.

Figure 8. Salomon Certon's aligned text

We first chose to compare Salomon Certon's translation [Certon 1604] with the others. The immediate post-Renaissance period is a very rich time for Greek and Latin culture.

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The idea that a cultural regeneration is deeply related to linguistic regeneration flourishes. That is to say that French poets tend to seek their own style within Ancient Epics. The general idea is that the skillful translator should not slavishly imitate the author's genius, but enrich it by giving it his own skill and language (*translatio studii*). Translating appears therefore to be highly linked with imitation. The same tradition is tangible in Ronsard's followers' works, such as in Amadis Jamyn's *lliad* in hexameters. The *Odyssey* had only been partially translated before Salomon Certon, and his attempt is the first ever to translate the entire *Odyssey*. Although Certon translates the *Odyssey* at the beginning of the 17th century, he is clearly inspired by the methods and traditions of the 16th century. He specializes in Latin metrics that

he tends to reproduce, and it is clearly visible that he has read Jamyn's first three and Peletier's first two books [Salel 1545], as he tends to imitate them, or even cite them *pro verbo*. Initially he did not want to translate the whole *Odyssey*, and it was Henri IV himself that asked for the complete translation. But Certon did acknowledge his affiliation with his predecessors, and did not count so much on innovation. Like Jamyn, he is not such a good Hellenist, and is forced to repeatedly use Volterra's Latin translation, which was not even the latest and most accurate of his time. As a result, many times, when Certon misses parts of the *Odyssey*, it can be attributed to a Latin omission (while these parts are present in his Greek version). However, his translation, as we will see, seems to be nearer to the Greek than, for example, Jamyn's. Certon tends to reproduce more proper nouns than Jamyn, and is much nearer to the Greek syntax and phonemes than his predecessor. As a result we could say that his translation is not innovative in his translating habits, but that being the first of its kind in terms of tackling the whole *Odyssey* in French, he had to rely more heavily than his predecessors on both Latin and Greek versions.

In this abstract we can see that the necessity of capturing Homer's verses causes an expansion of the text, leading to the presence of many hapaxes or low frequency terms, that is to say words that are not present in any of the other translations at this point of the text. For example, in *"Lorsque j'eus par mes voeux & supplications / Apaisé les esprits, fait mes oblations*", the second line is an expansion and cannot be justified by the Greek text. This suggests that Certon privileged maintaining the metre over strict accuracy.

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Comparing Certon's translation with the others it is apparent that he translates in "alexandrins", and tends to drastically develop the Greek text (his is one of the longest texts in our corpus). The verb " $\lambda \alpha \beta \omega v$ " simply disappears. The word " $\kappa \epsilon \lambda \alpha \nu \epsilon \phi \epsilon \zeta$ ", literally "in black smoke", becomes "une rivière grosse et du coup une humeur noirastre distilloit" ("an enormous river and from the neck a black liquid ran"), which is a clarification and an amplification. Many of Certon's connotations cannot be deduced from the Greek text, such as souls "qui volent" ("flying"), "vaines" ("empty") (Christian heritage of the soul's lightness). Death is personified, which is quite far from the traditional pagan belief of the souls' peregrination. The tragic connotation is amplified. The " $E\rho\epsilon\beta\epsilon\nu\varsigma$ ", like in Volterra's Latin translation [Maffei 1523], is absent. In fact, in his whole translation, Certon tends to emphasize the gleam and shine of French. Therefore, we may say that, if there is a kind of imitation of the Greek text, it is more the imitation of a spirit rather than servile literal imitation. Certon's goal, when translating the *Odyssey* is less a stylistic matter than a moral matter. For Certon, the *Odyssey* seems to have a moral function much more than a purely aesthetic one.

### Achille de la Valterie, 1681

04, Salomon Certon, chant 11 X	<sup>^</sup> 1681, Achille de La Valterie, chant 11 X	<sup>^</sup> 1716, Anne Dacier, chant 11 X
[11] ^	& à	en particulier à
[12] <sup>^</sup> [13] Tirésie à part promets de mon troupeau / Qu'une grasse brebis à la noirâtre peau / Sera sacrifié à luy seul, surpassant / Le reste de la troupe és prés l'herbe paissant / Lorsque j'eus pr mes vœux & supplications / Apaisé les esprits, fa mes oblations, / J'égorge les brebis au-dessus de la fosse: / De sang coulait dedans une rivière grosse. / Et du coup une humeur noirâtre distillait Lors une quantité autour de moy volait / De simulacres vains, ceux que la mort cruelle / Avait	[12] <sup>A</sup> [13] Tyresias, le bélier le plus noir & le meilleur de tous mes troupeaux. / Après ces premières cérémonies, on immola les animaux, dont le sang couloir dans cette fosse mystérieuse. Les Ombres y accourrent aussibl, comme on voit que les	[12] Tirésias seul un bélier tout noir, qui serait la fleur de mes troupeaux. / Après que j'eu adressé à ces morts mes vœux et mes prières, je pris les victimes et je les égorgeai sur la fosse. Le sang coulera gros bouillons; les ombres viennent, de tous côtés du fond de l'
mes oblations, / J'égorge les brebis au-dessus de la fosse. / De sang coulait dedans une rivière grosse. / Et du coup une humeur noirâtre distiliait. / Lors une quantité autour de moy volait / De simulacres vains, ceux que la mort cruelle / Avait à toute force entrainés apres elle : / Les jeunes vigoureux, & les faibles vieillards / A l'environ de moy courent de toutes parts: / Maintes Nymphes encore, & filles misérables / Que le deuil au trépas a conduit pitoyables: / D'autres y avait là de grands coups transpercés. / Les armes tout en sang : ils couraient à la fosse. / Et sy précipitaient en multitude rosse. / Et sy précipitaient en	oiseaux s'assemblent dans un bois qui leur plaît. J'étais touché du sort de tant de jeunes garçons & de jeunes filles que je voyais. Ils semblaient avoir regret d'être sortis delà vie, & que la fleur de leur àge eût si peu duré. Je voyais aussi des vieillards qui n'avaient pu se rebuter des incommodités de leur vieillesse. Mais je fus Surpris d'entendre des cris horribles de Capitaines qui avaient péri dans les combats. Ils roulaient autour de cette fosse avec une extrême impatience de boire du sang dont elle était pleine. Je les en éloignais à coups d'épée, pendant que mes compagnons achevèrent le Sacrifice, en les victimes sur un bûcher, les offrat à	<ul> <li>[13] Erébe. On voit pêle-mêle de jeunes femmes, de jeunes hommes, des vieillards desséchés par de longs travaux, de jeunes files décédées à la fleur de l'âge, des guerriers couvert de larges blessures, victimes du dieu Mars, et dont les armes étaient encore teintes de sang. Ils se pressent tous autour de la fosse, avec des cris aigus ; une frayeur pâle me saist. Je commande, à mes compagnons de dépouiller les victimes que j'avais égorgées, de les brûler, et d'adresser leurs prières aux dieux infernaux, au puissant</li> <li>[14] Pluton et à la sévère</li> <li>[15] Proserpine. Et moi, l'épée à la main, j'écarte</li> </ul>
frêle rumeur. / Tout le corps me glaça de frisson & tumeur. / Et le sanc me ficea de peur & de misère	[14] Pluton & à	ces ombres, et j'empêche qu'elles n'approchent du sang, avant que j'aie entendu la voix de

Figure 9. Multiple alignments around Achille de la Valterie

Figure 10. Achille de la Valterie's aligned text

On the whole, we know very little about Achille de la Valterie. We know that he was a *"jésuite*", but that he renounced his vows later on. He is also known to have published a translation of Juvenal's and Perse's *Satires*, and that he translated the *Iliad* as well as the *Odyssey*. His Homeric translations begin with an *"épître*", from which we can deduce his way of translating. First, he states that there is no need to know about Homer's life to translate Homer:

Quand on ne sait point toutes ces choses, on a du moins l'avantage de n'être point obligé de les oublier, après avoir perdu beaucoup de temps à les apprendre.<sup>[7]</sup>

There is therefore no documentary value in Homer's epics. And although he states that strict proximity to the Greek text is one of his goals<sup>[8]</sup>, he also states that Homer's epics should not be left unattended and may need consistent changes:

Pour prévenir (...) le dégoût que la délicatesse du temps aurait peut-être donné de ma traduction, j'ai rapproché les moeurs des Anciens autant qu'il m'a été permis (...) [et] je n'ai osé faire paraître Achille, Patrocle, Ulysse et Ajax dans la cuisine, et dire toutes les choses que le Poète ne fait point de difficulté de représenter (...) je me suis servi de termes généraux dont notre langue s'accomode mieux que de tout ce détail.<sup>[9]</sup>

La Valterie has no real philological ambition. Indeed, from what we can get studying his translations, La Valterie is an extremely poor Hellenist (it is almost doubtful that he read any Greek at all) and mainly translated from Latin, but also from existing translations (this is quite visible in our program when you compare La Valterie's translation [de la Valterie 1709] to Boitel's [Boitel 1638], as they have very rare terms in common in the same places and follow the same syntactic structure, almost amounting to plagiarism).

Our program does help us to see immediately that La Valterie's translation is extremely far from the original text, and even contradictory with its supposed source. A frequency study shows that the whole (or at least the majority) of La Valterie's translation is sewed with hapaxes (it is both far from the Greek text and never used in any of the French translations), which made it the most difficult text to align. We can also see that, although most translators tend to reproduce important syntactic marks in Greek (full stops, etc), La Valterie's translation is the only one with no resemblance whatsoever to the Greek syntax. This is visible in our example. Sentences are long, there are frequent clarifications, tangible modalisations, and, of course, many mistakes. It is also clear in this example that La Valterie tends to avoid what he considers as trivial words and expressions, which need to be either modernized or deleted. The word "*cérémonies*" may be justified (though it erases the polysemic " $\epsilon \dot{\alpha} \chi \omega \lambda \eta \sigma \sigma$ ", both supplications and liturgical prayers), "*se rebutter des incommodités de leur vieillesse*" ("grieving about the harshness of old age") is a complex manner of defining a much simpler down to earth single word in Greek, " $\pi \sigma \lambda \dot{\alpha} \lambda \eta \tau \sigma \varsigma$ " (then again this whole expression is an hapax, as no other translator will bother to be so disdainful of a simple practical term). The word "*Capitaines*" is a condensation of war heroes adapted to the 17th century.

Therefore, La Valterie's translation is both very far from being accurate or even faithful to the Greek. In later critical essays on Homeric translations, especially in Madame Dacier's work, which is discussed below, La Valterie is seen as someone who has been left behind by the progress of translation. His translation has been edited, reprinted, but there are still no serious critics who say anything positive about it, quite the opposite in fact. A few years late, La Valterie becomes the paragon of a moralist translator; fit to feebly teach some moral values, but clearly unfit to reveal Homer's beauty. From the 17th century onward, practising translation as a mere imitation is no longer an unquestionable principle.

Figures 9 and 10 show an alignment around La Valterie's text and a small part of the same text tokenized in blocks in the interface.

## Anne Dacier, 1716

.681, Achille de La Valterie, chant 11 🛛 🛛 🗙	1716, Anne Dacier, chant 11 ×	1777, Guillaume Dubois de Rochefort, chant 🗙	1785, Paul Jérémie Bitaubé, chant 11 🛛 🛛 🗙
prières que l'adressia à aux Ombres. Je leur promets après mon retour en [11] (thaque, la vache la plus grasse de toute liste; & à [12] ^	[12] Tirésias seul un bélier tout noir, qui serait la fleur de mes troupeaux. / Après que j'eu adressé à ces morts mes vœux et mes prières, je pris les victimes et je les égorgeal sur la fosse. Le sang coulera gros bouillons ; les ombres viennent, de tous côtés du fond de l'	11 (12 ) Enfers les Ombres révérées, / Moi-même jégorgeai les victimes sacrées, /Dans le fossé profond qu'avoient creusé mes mains. /A peine le sang coule & les bords en sont teints, /Que je vis de l'	[12] Tirésias le sacrifice d'un bélier, le plus distingué de ceux qui paissent dans mes prairies, et aussi noir que la nuit. / Après avoir adressé aux morts mes prières et mes vœux, J'égorge les victimes sur la fosse. Le sang coule en noirs torrens. Bientôt du fond de l'
(13) Tyresias, le bôler le plus noir 5 le meilleur de tous mes troupeaux. / Aprà ces premières cérémonies, on immola les animaux, dont le sang outoin dans cette fosse mystérieuse. Les Ombres y accoururent aussibit, comme on voir que les oiseaux s'assembient dans un bois qui leur plait. de jeunes filles que je voyais. Ils sembiaient avoir regret d'être soits dela vie, que la fleur de leur âge eût si peu duré. Je voyais aussi des viellards qui n'avaient pus erobutre des incommodités de leur viellesse. Mais je flus Surpris d'entendre des cris horribles de Capitaines qui avaient pârt dans	L3.1 Eröbe. On voit péle-méle de jeunes femmes, de jeunes hommes, des veillards dessáchés par de longs travaux, de jeunes filles décédées à la fleur de l'âge, des guerriers couvert de larges blessures, victimes du dieu Mars, et dont les armes étaient encore teintes de sang. Ils es argus, sune frayeur pále me saikt. Je commande, à mes companons de dépouiller les victimes que j'avais égorgées, de les brûler, et d'adresser leurs priferes aux dieux infernaux, au puissant L3.4 Phuton et à la sévire	[13] Érèbe accuir sur ces rives /Des Énsans épicrés, & des Vierges plaintives, /Des Vieillards accablés des maux qu'ils ont soufferts, /Des Guerriers tout armés, à de sang tout couverts. /Le peuple entier des Morts s'assemble & m'environne /La plaieur me saist, mon corp que je fis allumer, /Nos victimes bienôtt alloient se consumer. /Rt mes Anni, chargés de ce pleux office, /Achevoient, par leurs vœux, ce sanglant sacrifice : /lós mjorant les [14] ^	13.1 Erèbe s'élève de tout côté le peuple léger des ombres. On voit confondis les épouses, les hommes enlevés dés leur printemps, les viellards courbés sous le faix des ans et des travaux, les le unes filles gémissent d'avoir exhalé à leur tendre aurore les soufile de l vie, une louie de profondes blessures et chargés d'armes ensanglandes. Ces ombres se pressaient autour de la fosse avec des hurlements affreux ; j'étais glacé par la terreur. Cependant j'anime les miens à dépouller les victimes étendues sans vie, à les larrer à la famme, en invouant à grands cris les
avec une extrême impatience de boire du sang dont elle était pleine. Je les en éloignais à coups d'épée, pendant que mes compagnons achevèrent le Sacrifice, en les victimes sur un bûcher, les offrant à	ces ombres, et Jempéche qu'elles n'approchent du sang, avant que j'ale entendu la voix de [16] Tirésias. /La première ombre qui se présente à moi, ce fut celle d' 133 L'énégre, qui Jewit pas encors été enterré	glaive en main, j'empêche que les Morts / Ne viennent, dans ce sang que ma main leur présente, / Avant [16] Tirésias, calmer leur soif ardente. / A mes premiers regards	[14] Pluton et l'inexorable [15] Proserpine. Moi, le glaive à la main, loin de reculer, j'ose écarter la foule des ombres, sans leur permettre d'approcher du sang avant que
[14] Pluton & à	Nous avions laissé son corps dans le palais de [18] Circé, sans lui rendre les devoirs de la	[17 ] Elpénor vint s'offrir () /]'ignorois les malheurs qui l'avoient fait périr ; /Au palais de	[16] Tirésias ait rendu ses oracles. / D'abord m'apparaît l'ombre de notre compagnon, le malbauraux
			manourony

Figure 11. Multiple alignments around Anne Dacier

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### 1716, Anne Dacier, chant 11

[12] Tirésias seul un bélier tout noir, qui serait la fleur de mes troupeaux. / Après que j'eu adressé à ces morts mes vœux et mes prières, je pris les victimes et je les égorgeai sur la fosse. Le sang coulera gros bouillons ; les ombres viennent, de tous côtés du fond de l'

×

[13] Erébe. On voit pêle-mêle de jeunes femmes, de jeunes hommes, des vieillards desséchés par de longs travaux, de jeunes filles décédées à la fleur de l'âge, des guerriers couvert de larges blessures, victimes du dieu Mars, et dont les armes étaient encore teintes de sang. Ils se pressent tous autour de la fosse, avec des cris aigus ; une frayeur pâle me saisit. Je commande,

Figure 12. Anne Dacier's aligned

Madame Dacier's note on this part:

Les six vers qui suivent celuici : Parce, disaient-ils, qu'il n'est pas encore temps que ces Ames viennent, & que d'ailleurs il n'est pas possible que les blessures paraissent sur les Ames. Mais cette critique me parait trèsfausse. Pourquoi n'est-il pas temps que ces Ames viennent, Homere ne dit-il pas que les ombres des morts viennent de tous côtez du fond de l'Erebe ? & ne reçoivent-ils pas ce vers ? Les six qui le suivent n'en font que l'explication. Quant aux blessures, il est bien vrai qu'elles ne peuvent paroître sur la partie spirituelle de l'Ame, aussi n'est-ce pas de celle-là dont Homere parle, puisque les Morts ne l'avaient plus ; il parle du corps subtil de l'Ame, & tout ce qui avait blessé le corps terrestre, avait aussi blessé le corps subtil, & y avait laissé sa marque. Voilà pourquoi il est dit que dans les songes on voit les Ames dans le même état où sont les corps, & voilà aussi d'où vient la difference qu'Ulysse remarque dans ces ombres. Ce qui me parait le plus surprenant ici, c'est ce qu'Ulysse ajoute, que ces Ames, ces Ombres, qui n'étaient que le corps subtil de l'Ame, pouvaient-elles conserver leurs armes ? Je crois que c'est un point nouveau qu'Ulysse ajoute ici à la Theologie reçue, & qu'il ajoute, parce qu'il parle aux Pheaciens, peuple peu instruit.

The first turning point in contrast with this tendency seems to appear with Madame Dacier's translations (from what we gathered from the program, studying the texts diachronically). Anne Lefebvre Dacier (known as "Madame Dacier"), wrote her translations as a reaction to Homeric imitations. Many translators had followed the same principles as La Vallterie for at least a century. The *lliade* by La Motte [Houdart de La Motte 1714] is one of the many examples of a tendency to transform the epics into an "up-to-date" version. In this general atmosphere, Madame Dacier is an exception. She was very fond of Greek and Latin from a very young age, and was given the chance to grow up with just as much education as a man thanks to her father. Though small and, above all, a woman, her strong character and her excellent knowledge of Greek forced her peers to acknowledge the quality of her many publications<sup>[10]</sup>. She is a paragon of scientific, archaeological and philanthropic knowledge of Homer's works. As she says herself in her *lliade*:

Je n'écris pas pour les savants qui lisent Homère en sa langue (...) j'écris pour ceux qui ne le connaissent point, c'est à dire pour le plus grand nombre, à l'égard desquels ce poète est comme

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#### mort. [Dacier 1712]

Although she states that her work is not made to be a philological translation, it is clear that the amount of research and stylistic work in her translations is enormous<sup>[11]</sup>. The *Odyssey* [Dacier 1717] is heavily annotated (the notes generally take three quarters of a single page). She wants her readers to see Homer as he is, not as he should be in a contemporary world. Therefore, she has to explain many of the incoherences and cultural gaps that would make Homer incompatible with the modern world. She tends to justify shocking descriptions or attitudes in the *Odyssey* by saying that those were acceptable because they were different, and justifies her assertions both philologically and archaeologically. She also tends to erase most of Homer's stylistic specificities, as they have no scientific purpose.

Dacier uses common terms for the society she lives in, uses simplified syntax, and above all annotates her text enormously. We included the notes and explanations directly in the text but did not align them. What is most visible in this abstract is that Dacier tends to respect the length and syntax of the Greek text, much more than her predecessors. It is also visible that she initiates this tendency for the following translators such as Bitaubé (for more details on syntactic proximity after Madame Dacier, see our website). She erases the polysemy of the Greek word " $\kappa \epsilon \lambda \alpha \nu \epsilon \phi \epsilon \zeta$ ", interpreting it in a logical and clarified way (leaving aside both the smoky effect and its blackness). She just translates the expression "νεκύων κατατεθνηώτων" by "les ombres", erasing the redundancy like "the dead that have lived". Dacier definitely wants to imitate the Greek syntax, keeping the paratactic " $\tau\epsilon$ ": this is guite visible in the important similarity to the Greek throughout the text (see greyer colums). She also chooses to clarify the polysemous word " $v \varepsilon \sigma \pi \varepsilon v \theta \varepsilon a$ ", with the images of both sorrow and flowers. She adapts the deity Ares into Mars who would be more familiar to her audience, and she is one of the rare translators (along with Bitaubé) to use this adaptation. We decided to add the footnote we included, as it shows Dacier's desire to explain the war heroes' death in terms of Christian beliefs. There is no phonetic proximity to the Greek whatsoever. She does not simply want to imitate Homer but to make him understandable for her readers and so phonetic imitation, which is seen later in Leconte de Lisle, would be counterproductive. It is also noticeable that this abstract contains a large amount of green words, while earlier translations do not. This means that many of the words she uses were then imitated and reproduced by her followers. From the imitative flowery pomp we got from the previous century, we now get a form of puritanism from this erudite translator.

Figures 11 and 12 show an alignment around Dacier's text and a small part of the same text tokenized in blocks in the interface.

### Paul Jérémie Bitaubé, 1785

1777, Guillaume Dubois de Rochefort, chant 🗴 1785, Paul Jérémie Bitaubé, chant 11 🛛 🗴 1819, Charles François Lebrun, chant 11 🔍 1841, Anne Bignan, chant 11 

 113 ] Erébe S'élève de tout côté le peuple léger des ombres. On voit contondus les épouses, les hommes enlevés des leur printemps, les viellards courbes sous le southe des travaux, les reunes files gémissent d'avoir exhalé à leur trafra aurore le southe des les, une fouue profondes biessures et chargés d'armes ensanglantées. Ces ombres se pressient autour de la fosse avec des hurtements affreux ; j'étais à dépouiller les victimes étendues sans vie, à les dieux infernaux, thorrible
 111 1°

 113 [ Trésie en particulier une brebis noire, honneur de mes troupeaux. / a Après avoir, par mes rouzci, par mes prinzes, limé de la courbe des profondes biessures et chargés d'armes ensanglantées. Ces ombres se pressient autour de la fosse avec des hurdements affreux ; j'étais à dépouiller les victimes étendues sans vie, à les dieux infernaux, thorrible
 111 1°

 114 ] Pticon et l'Interventée dieux infernaux, thorrible
 121 Strése en particulier une brebis noire, honneur de mes troupeaux. / a Après avoir, par mes voizur, par mes prinzes, juie des la toute des fouxes, et les vierges qui ont sent les premiers feux de famour, et les viellars courbés sous le pressent en poussant des cris foibles et mourants et se précipitent vers la facer.

 sang coule & les bords en sont teints, /Que je vis II 3 1 Erêbe s'élève de tout côté le peuple léger de l' la fosse a ruisselé; les âmes » S'échappent de l' In forse a ruissele; tes àmes » S'échappent de l' 13 1 Erôbe e l'aperçoi des femmes, > Des enfans, des viellards accablés de douleurs, <> Des vierges déplorant leurs précoces malheurs. Plusieurs guerriers, couverts de sanglantes armures, » Traversés par la lance, étalent leurs blessures; » A l'entour du lossé, poussant des cri-biantifs, » voltigent au hasard les fantômes capitis, » Glacé d'un pâle effroi, des victimes socrées » Qui glesnit prés de nous, par l'arlan dans les feux » Les membres dépoullés avec un soin pieux, » Le d'invoquer, emus d'une terreur divine, » Le puissant roi La 1 Briton, Jaushère de l' Ita 3 Erèbe accourir sur ces rives Des Ensans éplorés, & des Vierges plaintives, / Des Viellards accablés des maux qu'ils on soufferts, /Des Guerriers tout armés, & de sang tout couverts. Ae peuple entire des Mots 'sassemble & m'environne ; /La plaeur me saisit, mon corps timeble & frissione. / Dans les feux cependant que je fis allumer, / Nos victimes bientôt alloints scortuire, /Le mes Amis, Langrés de ce pieux office, /Achevolent, par leurs vœux, ce sanglant sacrifice : /ls implorent les la forse, Les ombres accourent du fond de l' 13.1 Sréde: Les jourse d'apoux et les jourse épouses, et les vierges qui ont sent les premiers feux de framur, et les vierliers d'about et les guerriers qui ont péri dans les combats, encre chargés de leurs armes sanglantes et mutilées, / « Ils se pressent en poussant des cris foibles et mourants et se précipitent vers la fosse, / » Je pâlis, je frissonne ; Jordonne à mes compagnons de dépoullier les victimes et d'invoquer le noir (14.1 Pituto et la sévier (15.1 Proserpine. Moi, l'épée à la main, j'écarte les sombres et ne leur pernets pas d'approcher du sang jusqu'à ce que j'ale consulté (15.1 Triés. L'ombre d' [14] Pluton, l'austère [15] Proserpine. » Comr [14] Deux de ces lugubres bords; /Et moi, le glaive en main, J'empêche que les Morts / Ne viennent, dans ce sang que ma main leur présente, / Avant [14] Pitton et intexorable
[15] Proserpine. Moi, le glaive à la main, loin de reculer, j'ose écarter la foule des ombres, sans leur permettre d'approcher du sang avant que [16] Tirésias est encore attendu, » Ressaisissant / le glaive à mes flancs suspendu, » Je vais soudain m'asseoir et loin du sang qui coule » De ces mânes errans je repousse la foule. / » Le premier à mes yeux se présente [15] Proserpine. Moi, l'épée à la main, J'écarte les ombres et ne leur permets pas d'approcher du sang jusqu'à ce que j'aie consulté [16] <u>Tirésie</u>. L'ombre d' es présent de la participa de la participa de la participa. [16] Tirésias ait rendu ses oracles. / D'abord m'apparaît l'ombre de notre compagnon, le malboureur [16 ] Tirésias, calmer leur soif ardente. / A mes premiers regards [17 ] Elpénor vint s'offrir () //'Ignorois les malheurs qui l'avoient fait périr ; /Au palais de [18 ] Circé fait 
 [17] Elpénor: se présente la première: il n'a point encore reçu les homeurs de la sépulture: distraite par d'autres point, nous avions lisisés ses [18] Cricé nous vi dans ses palais funestes »
 [17] Elpénor: » Que la terre en son sein n'enferme pas encor, » Et dont [18] Cricé nous vi dans ses palais funestes »
 Elpénor. La terre ne l'avait pas encore reçu son sein. Entraînés par d'autres soins, nous s laissé son corps dans le palais de [18 ] Circé laisse sans sépulture, / Son âme aux avions



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#### 1785, Paul Jérémie Bitaubé, chant 11





Figure 14. Paul Jérémie Bitaubé's aligned text

Bitaubé's works show similar tendencies as Dacier's. Bitaubé's native language was German. When he decided to learn French, he saw it as a scholarly language, a language that tends towards excellence. Thanks to his first publication of the *Odyssey* [Bitaubé 1764], he became an academic in Berlin. He decided for a scholarly style that he calls "*prose cadencée*" ("prose in rythm"):

Il n'est pas aisé d'écrire dans une prose cadencée, harmonieuse, qui s'élève (elle le peut), au ton de la poésie ; et je soutiens que la gêne d'une grande fidélité, lorsqu'on s'y assujettit scrupuleusement, n'est pas si éloignée qu'on le pense de celle de traduire en vers.<sup>[12]</sup>

To assert this scientific ambition, Bitaubé is one of the first to explicitly mention any translator before him. What is more, not only does Bitaubé want to be exact in the meaning, he also aims at accuracy concerning style, imitating, as much as possible, Homer's *brevitas*. As a result, in only one century, the reader goes from imitative flowery pomp to scholarly puritanism. In our text, Bitaubé tries to maintain both the Greek syntax (just as Dacier did), but also its polysemous terms. For example, where Dacier used two coordinates, for " $\lambda \alpha \beta \omega v$ " and " $\epsilon \lambda \lambda i \sigma \alpha \mu v$ ", Bitaubé chooses juxtaposition, maintaining the Greek hypotyposis. The blackness and the liquid aspect of the " $\kappa \epsilon \lambda a i v \epsilon \omega v \kappa a a r \epsilon 0 v \mu \omega v$ ". Finally, he strictly imitates the Greek syntax, maintaining the paratactic syntax and the adjectives describing the dead.

After Bitaubé, the 19th century flourishes with many translations of Homer's epics. The French Revolution, and especially the Terror has given a new gleam to the ancient poets, supposed to be the witnesses of a higher moral value, lost in modern times, both aesthetically and politically. Bitaubé is in an in-between conception of the Greek literature as

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the "Dictionnaire bibliographique à l'usage des collèges" will say about him,

Il s'applique à conserver la marche et les formes de la phrase grecque, il imite assez bien l'abondance et la rondeur de l'original, et sa traduction a un air antique, et ne manque pas d'un certain charme ; mais l'audace, la majesté, l'éloquence variée d'Homère, la richesse de ses couleurs, le mouvement rapide de son style, la hardiesse et l'impétuosité du langage, on les cherche en vain ; on lui demanderait plus vainement encore la mollesse et la grâce, l'harmonie générale du style homérique, les expressions touchantes, cette mélodie suave<sup>[13]</sup>

A major evolution can be noticed here; a greater attention is given to Homer's style rather than moral teachings, and Bitaubé, although frequently reprinted at the time, especially in school books, is not criticized for the possible rashness of his translation, but on the contrary for his lack of Homeric style.

Figures 13 and 14 show an alignment around Bitaubé's text and a small part of the same text tokenized in blocks in the interface.

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### Charles François Lebrun, 1819



Figure 15. Multiple alignments around Charles François Lebrun

18	19, Charles François Lebrun, chant 11 🛛 💌
	[11] ^
	[12] Tirésie en particulier une brebis noire, l'honneur de mes troupeaux. / » Après avoir, par mes vœux, par mes prières, imploré la tourbe des morts, j'égorge les victimes et le sang coule dans la fosse. Les ombres accourent du fond de l'
	[13] Érébe ; les jeunes époux et les jeunes épouses, et les vierges qui ont senti les premiers feux de l'amour, et les vieillards courbés sous le poids des travaux et des ans, et les guerriers qui ont péri dans les combats, encore chargés de leurs armes sanglantes et mutilées. / « Ils se pressent en poussant des cris foibles et mourants et se précipitent vers la fosse. / » Je pâlis, je frissonne ; j'ordonne à mes compagnons de dépouiller les victimes et d'invoquer le noir
	[14 ] Pluton et la sévère
	[15 ] Proserpine. Moi, l'épée à la main, j'écarte les

Figure 16. Charles François Lebrun's aligned text

The thermidorian reaction to this way of perceiving the Classics puts to an end the cult of a lost Antique virtue. Volney, for example, will say:

Ce sont ces livres classiques si vantés, ces poètes, ces orateurs, ces historiens, qui, mis sans discernement aux mains de la jeunesse, l'ont imbue de leurs principes ou de leurs sentiments. Ils ont oublié que cette prétendue république, diverse selon les époques, fut toujours une oligarchie composée d'un ordre de noblesse et de sacerdoce, maître presque exclusif des terres et des emplois, et d'une masse plébéinne grevée d'usures, n'ayant pas quatre arpents par tête, et ne différant de ses propres esclaves que par le droit de les fustiger, de vendre son suffrage, et d'aller vieillir ou périr sous le sarment des centurions, dans l'esclavage des camps et les rapines militaires. [14]

As a result of this violent reaction, the Greek will again be given to the youth of the time, but not as a moral model, but much more as a potential source of erudition and scientific knowledge. Le Prince Lebrun is one of the heirs of such teachings.

Le Prince Lebrun is, above all, a *homo publicus*. He escapes many of the massacres from the French Revolution, avoids death during the final period of Napoleon's reign, and holds many public offices. His *lliad*, translated when he was young, was an exercise to make himself famous among the erudite society. His *Odyssey* [Lebrun 1819], however, is the work of a man that has already achieved social fame. He is one of the many men of power to demonstrate, by publishing poorly translated works, his ability to be both an important man and a scholar. His works, as a result, though very well known at the time and republished many times, were completely forgotten thirty years after his death.

In our text, we can see that he tends to strictly imitate the Greek, often in a clumsy way, and sometimes with great inaccuracy. This entire translation has no footnotes, no preface, no post-face. He has none of Dacier's or Bitaubé's

ethnographic care, although it is clear that he has read Bitaubé, as we can see from our program, as he reuses many words that had previously only be used by Bitaubé. This translation is the direct result of the educative principles initiated by Dacier and Bitaubé.

Lebrun's translation is an echo of the way Greek was taught at the time. Indeed, an enormous amount of partial scholarly translations appear during the second half of the 19th century that clearly tend to privilege the strict accuracy to the Greek text, without the help of Latin. The Greek Classics have become a source of linguistic benefits (the necessity to learn Greek at the time is often justified by the ability it should give to students to enhance their intellectual capabilities as well as their analytic skills, reasoning, and logic) and ethnological information (the Greek text should be perceived as a literary testimony).

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Figures 15 and 16 show an alignment around Lebrun's text and a small part of the same text tokenized in blocks in the interface.

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# Edouard Sommer, 1854



Figure 17. Multiple alignments around Edouard Sommer

# 1886, Édouard Sommer, chant 11

remplirais un bücher d'offrandes précieuses ; que je sacrifierais à

[12] Tirésias en particulier un bélier entièrement noir, remarquable parmi nos troupeaux. Quand j'eus adressé mes vœux et ries prières aux peuplades des morts, je saisis les victimes et les égorgeai au-dessus de la fosse, dans laquelle coulait un sang noir ; et du fond de l'

[13] Érèbe arrivaient en foule les âmes des morts : de jeunes femmes et de jeunes garçons, des vieillards accablés de misères, de tendres vierges au cœur rempli d'une récente douleur ; puis une multitude de guerriers percés par des lances d'airain, immolés dans les combats et revêtus d'armes ensanglantées. Ils se pressaient de tous côtés autour de la fosse avec un bruit immense ; et la pâle crainte s'emparait de moi. Alors je From the second half of the 19th century, many juxtalinear translations are published. For the first time, the aim is to publish a large amount of abridged translations, and if a certain abstract has more success than others, publish the entire translation. These translations are typographically recognizable; the first page is a word-to-word translation, unreadable and not supposed to be fluent, and the second page is a linguistically acceptable translation. This practical use of translation reveals two essential points in the evolution of translation practices. Firstly, in order for a translation to be judged adequate, it must show that the translator perfectly understood the syntactic problems of the Greek text and secondly, that Greek and Latin studies have never been more important in general education.

However, Sommer's many translations [Sommer 1854] do not aim at being original or stylistically distinguishable, but mainly tend to explain Greek syntactic problems. In our text, Sommer never omits a single word, keeping each redundancy, without seeking poetic effects (e.g.: the " $\psi u \chi a i v \varepsilon \kappa \dot{u} \omega v \kappa \alpha \tau \alpha \tau \varepsilon \theta v \eta \dot{\omega} \tau \omega v$ " is simply translated by "*les âmes des morts*"). What is more, Sommer tends to maintain Greek temporality: he keeps aorists and imperfects, not considering French habits ("*la pâle crainte s'emparait de moi*", "the pale dread was getting to me"). Sommer's translation is clearly and without any doubt the nearest text to the Greek syntax. The syntactic similarities are at their highest points throughout the text. What is more, the text displays an enormous amount of green and blue words, that is to say extremely frequent words. He does not aim at originality, but at reproducing the meaning word by word. Finally he is one of the rare 19th century translators (along with Leconte de Lisle) who share such a close proximity to the Greek at this precise point.

Both Latin and Greek Classics seem at this time to have regained a certain prestige. Many of the abridged translations are made for school use, and their notes and parallel analysis show a new grammatical perception of both languages. Almost paradoxically, the extreme accuracy asked for from the students will sometimes generate much bolder translations such as Leconte de Lisle's.

Figures 17 and 18 show an alignment around Sommer's text and a small part of the same text tokenized in blocks in the interface.

### Charles Marie René Leconte de Lisle, 1867



Figure 19. Multiple alignments around Charles Marie René Leconte de Lisle

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× 1867, Leconte de Lisle, chant 11 meilleure vache stérile que je posséderais, d'allumer un bûcher formé de choses précieuses, et de sacrifier à part, au seul [12] Teirésias, un bélier entièrement noir, le plus beau de mes troupeaux. Puis, avant prié les générations des morts, j'égorgeai les victimes sur la fosse, et le sang noir y coulait. Et les âmes des morts qui ne sont plus sortaient en foule de l' [13] Erébos. Les nouvelles épouses, les jeunes hommes, les vieillards qui ont subi beaucoup de maux, les tendres vierges ayant un deuil dans l'âme, et les guerriers aux armes sanglantes, blessés par les lances d'airain, tous s'amassaient de toutes parts sur les bords de la fosse, avec un frémissement immense. Et la terreur pâle me saisit. Alors j'ordonnai à mes compagnons d'écorcher les victimes qui gisaient égorgées par l'airain cruel, de les brûler et de les vouer aux [14] Dieux, à l'illustre Aidés et à l'implacable

Figure 20. Charles Marie René Leconte de Lisle's aligned text

In this period translators stop adapting the text to their own language and culture, but enrich their own style with the contact of strangeness. The climax of this tendency seems to be reached with Leconte de Lisle [Leconte de Lisle 1867]. Not only does he use rare terms or even hapaxes, but he also creates neologisms, and imitates the Greek itself as a sound. Leconte de Lisle was one of the reasons we used the Greek text as pivot as he is often quite literal in his phonetic imitations (he is without doubt the author that has the more italics in his text); this means it tends to be very different from traditional syntax. Indeed, the goal might have been first to disassociate the reader from his own hic et nunc, for lost and far away realities, but also to create a form of poetic hermetism. As a result, the program points out that in Leconte de Lisle's translation there are many hapaxes and many word similarities with the Greek, which is to say archaisms<sup>[15]</sup>. The goal is clearly to recreate a complete work of art, poetic and independent from its source for a renewed modern language. In our text, what is most noticeable is that Leconte de Lisle maintains most of the Greek syntax and uses an enormous amount of hapaxes (the first in our whole corpus to use so many hapaxes). In the first sentence, he strictly imitates Greek temporality, and he is the first to explicitly keep the perfect participle κατατεθνηώτων (accomplished fact) with "les morts qui ne sont plus" ("the dead that are no more"). The Έρέβευς is also phonetically imitated, as shown with the italics, translated as "Erebos". The following sentence exactly maintains the Greek syntax (nominative juxtapositions, demonstrative pronoun "oi"). But what is more, Leconte de Lisle maintains, as much as possible, every assonance and alliteration present in the Greek text (" $\theta \epsilon \sigma \pi \epsilon \sigma \eta i \alpha \chi \tilde{\eta}$ ", with three and two syllables: "frémissement immense", with three and two syllables). Even the books themselves are not books anymore but "rhapsodies". This tendency illustrated by Leconte de Lisle is clearly seen at the time as an emancipation. Translating means working not only on a source language, but on French itself. The fact that a new kind of French is needed is visible in the way translators deliberately skew common meanings and usage. Translation is not perceived only as a symbolic means of understanding ideas and culture, but also as a new way to express impression and sound. Translation itself is a new work of art.

However popular Greek studies might have been during the second half of the 19th century, their descent is quite tangible throughout the 20th, and so is a drop in interest for literary Greek translation, especially in the first twenty years of the century. This descent goes hand in hand with the increasing specialization of scientific and documentary matter. Knowing Greek means more and more that one should be familiar with a precise contextualized Greek reality and history. The study of Greek becomes the study of Greek history and archaeological value, not so much as purely developing a stylistic and grammatical ability.

Figures 19 and 20 show an alignment around Leconte de Lisle's text and a small part of the same text tokenized in blocks in the interface.

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## Victor Bérard, 1924



Figure 21. Multiple alignments around Victor Bérard

# 1924, Victor Bérard, chant 11

[12] Tirésias un noir bélier sans tache, la fleur de nos troupeaux. / Quand j'ai fait la prière et l'invocation au peuple des défunts, je saisis les victimes ; je leur tranche la gorge sur la fosse, où le sang coule en sombres vapeurs, et, du fond de l'

[13] Érèbe, je vois se rassembler les ombres des défunts qui dorment dans la mort : femmes et jeunes gens, vieillards chargés d'épreuves, tendres vierges portant au cœur leur premier deuil, guerriers tombés en foule sous le bronze des lances. Ces victimes d'Ares avaient encor leurs armes couvertes de leur sang. En foule, ils accouraient à l'entour de la fosse, avec des cris horribles : je verdissais de crainte. Mais je presse mes gens de dépouiller les bêtes, dont l'airain sans pitié vient de trancher la gorge : ils me font l'holocauste, en adjurant les dieux,

[14] Hadès le fort et la terrible

Figure 22. Victor Bérard's aligned text

information; he saw the epics as both a poem and a document. As a result, Bérard's translation [Bérard 1924] was paradoxically easy and challenging to align. It was easy because Bérard tends, writing in hexameters, to reproduce the syntactic movement of the Greek verse. He also tends to keep the polysemous aspects of each particular word as well as keeping in mind the principle of brevitas. As a result, if we compare the syntax of each aligned chunk with its Greek correspondent, we find an extraordinary proximity of length and syntax, almost as high as Sommer's. However, it was also, in some parts, difficult to align. This is because because, being an archaeologist, Bérard tends to force the original text into his own present reality. For example, he tends to change toponyms so that they match real places in modern Greece. This characteristic found in many of Bérard's translations and works on Antiguity has been gualified as the "complexe de Victor Bérard" [Montalbetti 1997]. Bérard wanted to locate every single topos described in the Odyssey in the modern world. To do so, from 1902 to 1912, he travelled throughout the Mediterranean sea, and wrote four volumes of 400 pages each entitled Les Navigations d'Ulysse [Bérard 1927]. These Navigations follow Ulysses' path throughout the Odyssey. Later in the Sillage d'Ulysse [Bérard 1933], Bérard collects all the photographs Fred Boissonnas, who accompanied him on his trips, took in Greece and identified each one as a specific Homeric topos. This is symbolic of what Bérard thinks about the art of translation, that it is as much archaeological research as it is a poetic activity. He views it as a way of combining past and present into a single universal reality. In our text, Bérard mainly imitates the natural movement of the Greek line, using the hexameter. For the first time, every Greek word is translated, this time in the iconic *brevitas* style, which makes this translation a true masterpiece, being both poetic and precise. For example, " $\kappa \epsilon \lambda \alpha \nu \epsilon \phi \epsilon c$ " is translated by "les sombres vapeurs" which is the shortest and yet the most literal translation we have. The same thing can be noticed about the word " $\theta \dot{\mu} \rho \varsigma$ ", erased from so many translations before, literally maintained without awkwardness, by "portant au coeur" ("bearing in their heart"). Let us also notice that the dread does not have a clarity, but a color, a characteristic that he will be the first one to use, and the nearest to the Greek so far. What is more, Bérard is the first since Certon to fully express Odysseus' fear with the hypotyposis present throughout the description of the dead, and keeping the paratactic asyndeton. We can notice a true evolution with Bérard's translation, initiated, we may suppose, by Leconte de Lisle. The strangeness of Greek must be assumed both as a philologic information for the Hellenist and an aesthetic novelty for the poet. We can therefore also see Bérard, apart from Leconte de Lisle, as one of the first to assume fully Greek proper nouns, many of which are in italics. We can also see that his translation, still one of the most well known in France today, has been reused and changed (in very different ways), both by Philippe Jaccottet and Frédéric Mugler. Indeed, Frédéric Mugler is often seen to reuse Bérard's translations without citing him, which we can see in our program as he uses expressions that have a very low frequency and that are only present in Bérard's translation. For example, just like in Bérard, the invocation is made to the "peuple des défunts", the animal's throat is "tranchée" (just as in, and only in, Bérard and Jaccottet), the old men are "chargés d'épreuves", and finally the dread is described with exactly the same words, "je verdissais de crainte". Concerning Jaccottet, it seems to be a quite different matter, as he is the first, after Bérard, to use French verses to translate the Greek epics.

Figures 21 and 22 show an alignment around Bérard's text and a small part of the same text tokenized in blocks in the interface.

### Philippe Jaccottet, 1955



Figure 23. Multiple alignments around Philippe Jaccottet

19	55, Philippe Jaccottet, chant 11
	morts par vœux et prière imploré, je saisis les deux bêtes, leur tranchai la gorge sur le trou; le sang noir coula; et du fond de l'Érèbe les âmes des défunts trépassés affluèrent : jeunes femmes, jeunes gens, vieillards usés par la vie, jeunes filles portant au cœur leur premier deuil, / guerriers nombreux, blessés par les lances de bronze et victimes d'
	[13] Arès, qui portaient leurs armes sanglantes. En foule autour du trou ils accouraient de tous côtés avec d'étranges cris, et la peur verte me gagnait. / Alors, d'un ton pressant, j'enjoignis à mes compagnons d'écorcher, de brûler les bêtes qui gisaient, égorgées par le cruel glaive, en adjurant les dieux, la redoutable
	[14 ] Perséphone et le puissant
	[15] Hadès. / Puis, tirant mon épée aiguë contre ma cuisse, je restai, empêchant les têtes sans force des morts de s'approcher du sang avant qu'eût parlé
	[16 ] Tirésias. / La première vint l'âme d'
	[17 ] <i>Elpénor</i> mon compagnon : il n'était pas encore sous la terre aux grandes routes, nous avions laissé son corps dans le palais de
	[18] Circé sans pleurs, sans sépulture, appelés par d'autres travaux. Mais je pleurai quand je le vis, pris de pitié et je lui adressai ces paroles ailées : / « Comment vins-tu, ô
	[19] <i>Elpénor</i> , dans la brume des ombres? Tu fus plus vite à pied que moi sur mon navire » / A ces mots, il me répondit en gémissant : / i « Un dieu hostile et un excès de vin firent ma perte : couché sur la terrasse de

Figure 24. Philippe Jaccottet's aligned text

We chose to analyze Jaccottet's translation here [Jaccottet 1955], as Jaccottet declares himself as an heir to Bérard (although not entirely). We should just stress that with the program we could spot two schemes: firstly Jaccottet's lines, just like Bérard's, tend to reproduce Greek syntax, secondly, Jaccottet uses high frequency and everyday words, which sets him apart from Bérard. This tends to illustrate what Jaccottet may say himself about his own style: expression should be "*loyale*" (both "accurate" and "faithful"). From a translator's point of view, this first means that there is a promise of truth between the word and the object it represents, but also between a foreign word and a familiar word. As Jaccottet states himself:

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Y entendre ne fût-ce qu'un écho très affaibli de l'admirable musique originale, il faut alors traduire, dans la mesure du possible et sans tomber dans l'absurde, selon la lettre même du texte. De même, il faut écouter plutôt que lire, ainsi [...] le texte retrouve sa lenteur nécessaire, son mouvement, quelque chose de sa résonance.<sup>[16]</sup>

Both Bérard and Jaccottet, though to different extents, embody this increasing attention to the poetics of their source material and the need to reproduce an echo of what has been lost. In our text, we can first notice a symmetric inversion of the syntactic order, emphasizing the liturgical aspect of the scene and the Homeric tendency to maintain the hesitation between the narrative and the incantation. The expression "*les deux bêtes*" ("the two beasts"), most unusual, may be due less to the context than to the phonic imitation of  $\delta \hat{\epsilon}$ . The word "*trou*" is almost shocking, but then again reflects the phonic imitation of  $\beta \hat{o}\theta \rho ov$ , and its extreme simplicity (an essential notion in Jaccottet's poetry). The problematic expression " $\psi u \chi a \hat{i} v \epsilon \kappa \hat{u} \omega v \kappa a \tau a \tau \epsilon \theta v \eta \hat{\omega} \tau \omega v$ " is translated with apparent ease, both keeping the pleonasm and the naturalness of the language, with "*les âmes des défunts trépassés*" ("the souls of the departed dead"). The

adjective "étrange" ("strange") maintains Odysseus' uneasy feeling (implied by " $\theta \epsilon \sigma \pi \epsilon \sigma (\eta)$ "), and while Jaccottet maintains the final imperfect (also visible in the Greek text), he gives it an inchoative connotation, which is most original. Finally, let us point out that there are no capitals in Jaccottet's poetry, corresponding both to his own principle of "*effacement*" ("disappearance") and to a vision of poetic rhythm (conceived as a blow, a wind, which should not be stopped).

Here we showed a larger sample of Jaccottet's abstract, as a smaller sample, similar to ones used for other translations, would not have highlighted Jaccottet's exceptional attention to accurately recreating the Greek. As we saw, he tends to reproduce as many phonemes as he can, and many of his proper nouns, but also many inner words, are in italics, and he has an exceptional high similarity with the Greek syntax, comparable only to Sommer's.

Both Bérard and Jaccottet, following the path Leconte de Lisle had initiated, have contributed to a new perception of translation, as a masterpiece both in debt and independent from its source. We would like to conclude this analysis of Jaccottet's work with one of his own elegant statements about translation in his preface:

Et tel aura été le rêve, utopique, de cette traduction, défectueuse comme toute traduction : que le texte vienne à son lecteur ou, mieux peutêtre, à son auditeur un peu comme viennent à la rencontre du voyageur ces statues ou ces colonnes lumineuses dans l'air cristallin de la Grèce, surtout quand elles le surprennent sans qu'il y soit préparé ; mais même quand il s'y attend, elles le surprennent, tant elles viennent de loin, parlent de loin, encore qu'on les touche du doigt. Elles demeurent distantes, mais la distance d'elles à nous est aussi un lien radieux.<sup>[17]</sup>

Figures 23 and 24 show an alignment around Jaccottet's text and a small part of the same text tokenized in blocks in the interface.

The program we made was extremely effective at analysing and identifying different trends and patterns in a range of French translations from the 16th to the 20th century. Thanks to our efforts in alignment and improvement of NLP tools within a single interface, we tried to give the common user access to potentially enriched literary analysis. This has only been a sample, but we hope to develop both our corpus (in different languages) and our tools in future months.

# **Conclusion and future work**

Translation studies, but other fields as well, would benefit from such a quantitative and qualitative approach, as many researchers would not have to rely on intuition or personal estimation of manual comparisons, but could have access to actual quantitative and qualitative results and facts, that could not be obtained otherwise. Here we gave an example of a possible diachronic interpretation done with the help of such a tool. Many works on the history of translation<sup>[18]</sup> have been printed where the researchers' potential could not be given its full expression due to the lack of data or the massive aspect of the analyzed corpus. Although our work is still in progress, our goal is to fill that gap.

In our analysis we tried to show that there is a tangible and possibly explainable evolution in the way French translators saw and practised translation from the 16th to the 20th century. At the beginning, when the Homeric text was barely known and barely accessible in common language, translation was more a matter of *imitatio* than proper *translatio*. The source text would be used as a moral pivot to enhance the inner stylistic value of the target language. Translations were then quite far from the original, both because Greek language was very poorly known, and because there was a need for a national poetry that could not be satisfied by merely copying *pro verbo*. This perpetual adaptation and, some might say, mutilation of the Greek text found its counterpart later on in a renewed interest in the Greek text itself. This view led to the idea that the original text needed to be re-evaluated and cleaned of all its modern modifications. Following this, there was a movement to make the Greek language and Greek archaeological culture more accessible to scholars and the wider public. Translations were then nearer to their source and more respectful of its historical foundation. This new scholarly interest in the Greek itself led to a wider grammatical and scientific study of the language both in universities and schools. All translations of the 19th century are conditioned by this new linguistic approach, less and less caring about its moral potential teachings. But the knowledge of the Greek, precisely because of this grammatical and linguistic specialisation, was progressively confined to a more restricted and schoolarly area. The Homeric epics became

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considered, especially after the First and Second World Wars of the 20th century, both as a poem and as a document. Therefore, up to Jaccottet's and Mugler's translation, it did not lose its poetical value, but it was more recently perceived as some forgotten sound, some echo of a culture that is nowadays lost and that one cannot pretend to fully adapt to modern times.

The program discussed in this paper has a variety of applications depending on the interests of the researcher. These applications include analysing individual authorial style or analysing the style of individual translations; they also include comparing translations with the source text as well as comparing different translations. The analysis presented in this paper is focused on a short sample of the *Odyssey* and various translations. A longer work would be able to address questions of whether these translations are representative of contemporary literary fashions and styles, as well as common cultural conceptions of the eras in which they were written.

If these results are interesting in one language, it would be even better to conduct research on diachronic translation corpora in different languages. Since the alignment program works for many European idioms, similar research would be possible using the same system. Aligning multilingual translations we could both compare the features of contemporary translators in different languages aligned to the original text and align different translators between themselves (for example, we could align Madame Dacier's *lliade* with Casanova's *lliade*), a direct way to compare styles and approaches. We would like to compare, for example, the set of French translations of the 11th book with a small group of Italian translations of the same text, to identify unique and different trends in different languages.

#### Notes

[1] Even free translations, a problem that wasn't generally considered by textual aligners since recent studies

[1] The design of the aligner component emphasizes a number of general software design principles. In particular, two aspects characterize the process of such a design: 1) considering and putting into effect general and proven solutions to recurring design problems (see design patterns, [Gamma 1995]), and 2) taking into account suitable Application Programming Interfaces (APIs) as the actual means to separate services from the implementation details [Tulach 2008]; [Henning 2009]. As a result, the component tries to achieve a high degree of extensibility with a low degree of modification (see Open-Close principle in [Robert 2000]). By doing so, the clients of the aligner module have to work only with the Abstract Data Types (ADTs) which have no part in the implementation mechanisms [Gabbrielli 2010]. Consequently users rely only on well-defined Application Programming Interfaces (APIs) which are exported by the component implementation.

[2] For details on phonetic transformer, see code online, PhoneticTransformer class in https://github.com/OdysseusPolymetis/Odysseus.

[3] For details see our github repository: https://github.com/OdysseusPolymetis/Odysseus.

[4] A source and a target sequence, predicting for each word of the source sequence a word of the target sequence based on the 1:n model of alignment.

[5] The probability of an occurrence is based on the preceding one.

[6] Our website is accessible at the following web address: https://odysseuspolymetis.github.io/paralogos. The whole code is freely available as open-source.

[7] "When you do not know all these things, you have at least the advantage not to have to forget them, once you have lost so much time learning them" [de la Valterie 1708]

[8] "Je puis prendre à témoin ceux qui entendent la langue grecque, que j'ai copié exactement mon original, étant persuadé que la beauté de mon ouvrage consistait à conserver avec quelque sorte de religion tous ses traits, et à les exprimer avec une parfaite fidélité", "All those who know Greek can bear witness that I exactly copied the original, and that I am convinced that what made my work beautiful was that I religiously preserved all its aspects, and that I expressed them with perfect accuracy." [de la Valterie 1708]

[9] "To avoid (...) some reluctance possibly found in our delicate times while reading this translation, I approximately followed the Ancients' customs. I did not dare show Achilles, Patroclus and Ulysses in the kitchen, and say all the things the Poet cared to show. I used general words, more appropriate in our language than those many details." [de la Valterie 1708]

[10] See for example Dacier, Anne. Comédies grecques [d'Aristophane]. G. Gallet, 1692, Dacier, Anne. Les poesies d'Anacreon et de Sapho, traduites de grec an françois, avec des remarques chez Paul Marret, 1699, Dacier, Anne. Dictys Cretensis et Dares Phrygius De bello et excidio Trojae, in usum serenissimi delphini, cum interpretatione Annae Daceriae. apud Georgium Gallet, 1702, Dacier, Anne. Ilias, 1712, Dacier, Anne. Des causes de la corruption du goust. Rigaud, 1714.

[11] On this matter, see [Dacier 1717], but also many works about her, such as [Garnier 2002]

[12] "It is not easy to write in prose with rhythm, harmony and worthy (it can be) of poetry ; and I am sure that the uneasiness due to scrupulous accuracy is not as far as we might think from the difficulty of writing poetry" [Bitaubé 1764]

[13] "He is intent on keeping the Greek movement and syntax, he fairly well imitates the abundance and roundness of the original text, and his translation seems antique, somehow charming; but for Homer's boldness, majesty and various eloquence, for his rich colours, his audacious and daring language, you may look in vain. One might even less ask him for gentleness and gracefulness, the general harmony of Homer's style, his touching expressions, his smooth melody." [Michaud 1843]

[14] "Those classics, that we praised so much, those poets, those orators, those historians, all of those, indiscriminately given to the youth, nourrished her of their principles and feelings. We all forgot that this so-called republic, variable during different eras, was always an oligarchy, made of the noblemen and the church, exclusive masters of lands and works, and of a crowd of common people weighed down by debts, not even posessing four acres each, only differing from their own slaves by the right to punish them, sell their vote, and grow old and die under the Centurions' flags, as camp slaves used to pillaging soldiers." [Volney 1799]

[15] As Henri Meschonnic says for André Chouraqui, "Chouraqui [...] ne fait rien de nouveau, sinon que, comme Leconte de Lisle avec les noms dans Homère, il les ensauvage en les originant.", "Chouraqui [...] does nothing new, but like Leconte de Lisle with names in Homer, he wilders the names by originating them." [Meschonnic 1999]

[16] "One should be able to hear at least the feeble echo of the admirable original music, and we should translate, as far as it is possible, and without absurdity, according to the letter itself (...) the text should find its necessary slowness, something of a resonance" [Jaccottet 1955]

[17] "And such has been the utopic dream of this translation, faulty like any translation: to make the text come to the reader, or better perhaps, to his listener just like come to the traveler these statues or these light columns in the crystalline air of Greece, especially when they surprise him completely unexpected; but even when expected, they surprise him, as they come from far away to speak although just perceived. They remain apart, but the distance from them to us is also a radiant link." [Jaccottet 1955]

[18] See for example, apart from Antoine Berman and Henri Meschonnic, among others, the complete and thorough collection *Histoire des Traductions en Langue Française*, [Chevrel 2012], [Chevrel 2014]

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