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Comparison of 6 English translations of Lucretius “De rerum natura”

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1. Introduction and Methodological Approach.

Initial research idea – metric comparison of translations

This was the initial idea of what could be compared between English translations: “To compare different translations, that would require to slice De Rerum text in smaller, meaningful units. In prose texts usually there is a “sentence-to-sentence” concordance. In poems, to preserve rhyme and meter, sometimes translators relocate words and phrases, but not across limits of one verse (stanza). Although Lucretius text is called Poem, that should be scrutinized – what is the unit in Lucretius: a verse, a paragraph, other. And do translators adhere to it. Furthermore, look at translations, are there some visible, distinct mark indicating a new line / sentence / paragraph which can be used to computationally split the text.”

However, no other translation except 1656en use obvious meter and end-rhymes – therefore another avenues for research had to be found.

Methodological approach to 6 translations comparison

In order to focus on the text itself and inter-textual comparison, a “Roland Barthes type approach” was chosen – that is, to not look at historical, biographical, socio-linguistical sources, references and analyses, but examine the text itself. (Partly such

an approach was chosen because of the shortage of time, and the need to focus on one aspect – and this one aspect was: application of computational DH methods for comparison of translations).

In principle it is a valid and often fruitful method to focus on the features of text itself without putting too much emphasis on speculations derived from secondary sources. However, it has to be admitted, that in our research there was a serious hindrance to get completely trustworthy results with this method – our source texts (6 translations) were retrieved from the internet; and it is highly possible that some of the “features” (line-breaks; spelling of certain words; et al) we analyze in the text are later sediments, either by human-directed enhancing / editing of text, or just purely technical glitches introduced in the process of converting and processing text for uploading it to the web.

Some limitations to the method due to impurity of source texts

Here follows a glance at OCR errors in 1656en translation and their manual resolution, which obviously pose some limitations to “pure, a-historical” text analysis method, as the source text is actually not pure.

1656en translation with OCR errors:

Whilst on thy lips his fainting soul is plac'•,
And he within those sacred arms enchac'•;
Let charming accents thy sweet lips i•spi•e,
And for sad Rome an happy peace require;
For whilst our Countrey thus afflicted lies,
With what content oan we Philosophize!
Nor may brave Memmius then wanting be
To th'Publike peace in such perplexitie.

With manual correction of OCR errors:

Whilst on thy lips his fainting soul is plac'd,
And he within those sacred arms enchanc'd;
Let charming accents thy sweet lips inspire,
And for sad Rome an happy peace require;
For whilst our Countrey thus afflicted lies,
With what content oan we Philosophize!
Nor may brave Memmius then wanting be
To th' Publike peace in such perplexitie.

As this part of research is not concerned with the exact linguistic change over time, the exact display of OCR-wronged words is not crucial, and just a fair effort is done to normalize these 4 words. “Inspire” looks normal, “plac’d” looks like a normal contraction. “enchanc’d” – could be a form of “enchanced”. “Publike” – related to “public”; as there are other Capitalized common words (as opposite to Proper names) before, the “Publike” is preserved with a capital “P”, and also suffix “-e” is preserved at the end – not knowing if such was orthography in 17th century or if it is an OCR-error.

A short description of contents Lucretius text analyzed in this research

A short description of content of 42 lines from Book I, analyzed in translations:

– introduction and veneration of Venus – Venus, goddess of love – Venus moves passions and desires in all nature and animal world – Mars, god of war, introduced – Mars desires Venus as others do and reclines over her – narrator asking for good peace for Romans – Memmius cannot devote himself to philosophy during these hard times to Rome.

2. Preprocessing of source files.

A pre-processing and cleaning of files for analysis

A script file `freqlist.sh` was written. It lowercases all text, removes specific punctuation and puts every token on a new line. (For punctuation removal an explicit command was used, because the default `[:punct:]` removed also dashes and hyphens, which was wrong for hyphenated words, such as “ship-bearing” and a few others).

```
#!/bin/bash

cat $1 |
dos2unix |
tr "[:upper:]" "[:lower:]" |
tr -d "[.,;():!]" |
tr -s "[:space:]" "\n" > $2
```

To perform the above listed commands on all source files simultaneously a following Makefile was created:

```
BOOKS=1656en 1743en 1872en 1886en 1916en 1936en

FREQLISTS=$(BOOKS:%=results/%.tok)

all: $(FREQLISTS)

results/%.tok: tr-files/%.src
    bash freqlist.sh $< $@
```

Here all initial files are saved in a variable `BOOKS`. Then a `freqlist.sh` file is executed on every file in the folder `<tr-files>`, and output is sent as files to folder `<results>`, preserving the same file names, now with an extension `.tok` added.

Tokens count in Latin and in English Translations

Greater quantity of tokens in English translations could be attributed to the qualities of English – more articles (the, an, a), prepositions (of), also occasional use of conjunctions (and), where there is not a conjunction in the Latin text.

Matching tokens from Latin text in each of English translations and percentage:

Words count in translations relative to Latin text				
edition year	words	% of words in English edition, compared to Latin text	words in ENGLISH translation which appear in LATIN text	% of ENGLISH words in translation which has a corresponding word in LATIN text
latin	277	100,00		
1656en	358	129,24	173	62,45
1743en	426	153,79	206	74,37
1872en	328	118,41	210	75,81
1886en	443	159,93	237	85,56
1916en	392	141,52	197	71,12
1936en	473	170,76	241	87,00

3. Analysis of linguistic and semantic choices in 6 translations

3.1. Six telling case studies

3.1.1. “navigerum” – influence of previous translations?

That was not a central question of research, however, it is interesting to see if translators use earlier translations or at least consult them – and can we deduce answer to this question by just comparing texts. All in all, the differences were so great between translations, that it could be said with certainty that all of them are independent, self-sustainable translations, even if translators were familiar with previous translations. From 42 lines containing 277 tokens (in Latin), there was just one occasion where English translations were very similar, although the form used was not an obvious choice. That refers to Latin words “navigerum” (14 token nr) and “frugiferentis” (17 token nr), which in 4 of 6 translations are translated with a hyphenated compound, e.g. “ship-bearing”, see below.

Not elsewhere in the analyzed fragment such hyphenated forms occur.

(0 denotes that there was no corresponding word in that English translation)

01_latin_order	02_latin_tokens	03_eng_direct_tokens	1656_en	1743_en	1872_en	1886_en	1916_en	1936_en
14	navigerum	Ship-bearing	ship-bearing	bearing	ship-bearing	ship-carrying	0	carries
15	quae	who	0	0	0	0	0	that
16	terras	earth	earth	earth	lands	lands	lands	land

17	frugifere ntis	fruitbearing	corn - beari ng	fruitf ul	corn - beari ng	corn - beari ng	fruitf ul	bear s
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3.1.2. Favoni & genitabilis

01_latin _order	02_latin_ tokens	03_eng_dire ct_tokens	1656 _en	1743 _en	1872 _en	1886 _en	1916 _en	1936 _en
65	genitabili s	of (adj sg masc gen)	geni al	geni al	0	birth - favo ring	procr eant	teem ing
66	aura	wind, air (in motion), a breeze, wind	0	wind s	breat he	bree ze	blow	wind
67	favoni	the west wind (Favonius)	west	west ern	zeph yrs	favo nius	west	west

The slightly different translations of “genitabilis”, showing the rich variety of English. “Favoni” is interesting as it is a proper name in Latin, however, only one of translators choose to preserve the Latin form with an added suffix “Favonius”, while all other opt for translation “west-”, and one even allude to “zephyrs”.

3.1.3. Verbs and nouns – treated differently

01_latin _order	02_latin_ tokens	03_eng_dire ct_tokens	1656 _en	1743 _en	1872 _en	1886 _en	1916 _en	1936 _en
81	ferae	a wild beast, wild animal	sava ge	sava ge	unta med	wild	wild	wild
82	pecudes	cattle	bruit s	beast s	herd s	herd s	herd s	beast s

83	persultant	to leap about, range through	jump	frisk	boun d	boun d	leap	boun d
84	pabula	fodder, pasturage, grass	mea ds	field s	pastu res	pastu res	field s	pastu res
85	laeta	joyful, cheerful, glad,	flow ry	chee rful	glad	glad	happ y	fat

An example showing that *nouns* are translated with a variety of synonyms centering around the same root meaning – whereas *verbs* function as more independent entities, able to work in different contexts – therefore, there is not so close a “family resemblance” relationship between the verbs used to translate the same Latin token.

3.1.4. Adverbs – not much of a choice for translators

01_latin_order	02_latin_tokens	03_eng_direct_tokens	1656_en	1743_en	1872_en	1886_en	1916_en	1936_en
124	quae	because	since	since	since	since	since	since
125	quoniam	because (for)	0	0	0	0	0	0
126	rerum	things	0	0	0	0	0	things
127	naturam	nature	natur e	natur e's	natur e	0	cosm os	natur e
128	sola	alone	sole	alon e	alon e	sole	alon e	alon e
129	gubernas	govern	reign	gove rn	rules t	mistr ess	guid est	pilot

This example shows several characteristic features. First, the 2 tokens “quae quoniam” of Latin is translated by 1 in English, and here it (adverb) is similar to all

translators. That tells that adverbs as function words are much more limited and translators cannot bend language to their taste when it comes to adverbs – which express a specific relationship. Rather interesting is the omission of “rerum” in all translations but one – that signalizes that all translators see “rerum” as an appendix to “naturam” rather than as an independent word bearing meaning. Translation of “gubernas” is furthermore interesting not only because of the wide variety of verb synonyms given, but also the noun form “mistress” used in 1886_en translation to translate the verb. Such interchanges between parts of speech are not uncommon.

3.1.5. Mars or Mavors

The following excerpt is telling in the attitude towards translating Latin proper name “Mars / Mavors” and his adjective “armipotens”:

01_latin_order	02_latin_tokens	03_eng_direct_tokens	1656_en	1743_en	1872_en	1886_en	1916_en	1936_en
200	belli	war	wars	war	war	war	battle	war
201	fera	beast	direful	bloody	0	savage	savage	wild
202	moenera	0	0	tumults	0	works	works	works
203	mavors	Mars	mars	mars	mars	mavors	mars	mavors
204	armipotens	in arms powerful	0	armipotent	potent	lord	puissant	lord
205	regit	to rule, to govern	lord	rules	rules	controls	rules	guides

The nowadays accepted form in English is “Mars”. However, looking at 6 variants chosen by translators, actually the older translations use form “Mars” whilst 1886_en and 1936_en adhere to Latin form “Mavors”. If the opposite were true, then there could be made some speculations about gradual appearance of form “Mars” in English use. However, here it makes one pose the question – do more contemporary

translations wanted to keep the original form of Latin for the sake of giving the authentic feeling of the text?

Such questions cannot be answered without background research of the topic – showing the potential of the computational methods in humanities (to find questions!), but also highlighting the importance of close reading and domain knowledge which help answer these questions!

“Armipotens” translations here show all the spectrum of translators’ choices when rendering a compound word which is fully meaningful in source language while direct translation might be incongruous in the target language – omitting it, transcribing the Latin with amendment of the suffix (“armipotent”), simplifying and keeping the essential part (“potent”), translating with an equivalent English term (“lord”), or providing an adequate but niche and foreign sounding translation (“puissant”).

3.1.6. “corpore sancto” – holy body, sacred arms, or heavenly limbs?

Some interesting commentaries about this passage where Lucretius describes lustful desires of Mars and him advancing on Venus. The scene is very erotic, full of passion, and although it is done in a godly way – with some restraint both on part of Venus and Mars – the depiction of desire is necessary for Lucretius as that is the gist of the passage: forces of war (Mars) and love (Venus) in an equilibrium as a necessary condition for procreation of anything.

Taking into account that translations were made to English language and to society living by Christian morality, where fleshly desires were frowned upon, it is interesting to see how translators chose to translate “corpore sancto”. The direct translation would be “holy body”. However, as “holy body” is often associated with body of Christ, some of translators choose different depictions, such as “sacred arms”, “heavenly limbs”, “sacred form”, “sacred limbs”.

01_latin_order	02_latin_tokens	03_eng_direct_tokens	1656_en	1743_en	1872_en	1886_en	1916_en	1936_en
240	tuo	on your	0	thy	0	thy	0	thy
241	recubantem	reclining	0	cling	recumbent	reposing	reclined	leans
242	corpore	body	arms	limbs	form	body	body	limbs
243	sancto	holy	sacred	heavenly	sacred	holy	holy	sacred
244	circum	round, around	0	round	0	about	round	0

3.2. Agreement – on what words translators agree most.

3.2.1. Untranslated words by all translators

The next section looks at unused (0/6 occurrences) or very-little-used (1/6 occurrences) words which are in Latin text but are not used / translated to English text – similarly for all or most of translations.

01_latin_order	02_latin_tokens	03_eng_direct_tokens	Nr of occurrences in English translations
18	concelebras	celebrate	0
57	ac	and (from atque)	0
97	quamque	and how	0
119	ut	that	0
125	quoniam	because (for)	0
134	dias	dea, of deity	0
135	in	in	0
157	conor	try	0
170	rebus	things	0
179	ut	in	0
231	eque	NaN	0
232	tuo	yours	0
251	funde	to pour out, to shed	0

261	hoc	here, in this place	0
15	quae	who	1
126	rerum	things	1
142	neque	nothing	1
144	quicquam	anything	1
147	studeo	studying	1
164	in	in	1
227	in	in	1
238	tu	you	1
255	incluta	celebrated, famous, glorious	1

Reflections on groups of non-translated (0 or 1) words:

(1) prepositions and conjunctions – the sense of the sentence in English can often be expressed without these or they are unnecessary in English, or there are no equivalent in English.

(2) “dias” – used as an address of Venus, often in a repeated form in Latin, for which just a single address is kept in the English phrase.

(3) “rerum”, “rebus” – in phrase “rerum natura”, apparently treated as non-semantic addendum to the “rerum” and omitted in English by translators.

(4) “concelebras”, “conor”, “funde”, “studeo”, “incluta” – more research needed to conclude why these words were predominantly omitted in translation. Also, it cannot be ruled out that an incorrect translation to “03_eng_direct_tokens” was created (by the author of this research paper, because of insufficient Latin knowledge) and therefore some words were not spotted, although there might have been a corresponding English word in some translations.

3.2.2. Identically translated words by all or most translators.

01_latin_order	02_latin_tokens	03_eng_direct_tokens	Word in English Translations	How many of 6 translators use this word
3	hominum	human	men	6
4	divomque	godly	gods	6
7	venus	Venus	venus	6
31	dea	goddess	goddess	6
43	tellus	the earth, globe	earth	6
45	flores	a blossom, flower	flowers	6
102	maria	seas	seas	6
124	quae	because	since	6
131	sine	without	without	6
136	luminis	of light	light	6
151	quos	whom	which	6
152	ego	I	i	6
186	ac	and	and	6

192	tu	you	thou	6
256	pacem	peace	peace	6
55	nam	for	for	5
61	diei	day (sg, masc gen)	day	5
69	primum	the first, first	first	5
78	tua	yours, of you (adj sg fem abl)	thy	5
109	avium	birds	birds	5
162	dea	goddess	goddess	5
249	ore	mouth	lips	5

Reflection on groups of words with great agreement:

- (1) nouns,
- (2) certain conjunctions and prepositions,
- (3) use of pronouns at certain phrases are identical for translations.

3.3. Diversity – on what words translators differ most.

Here is a list of words, where there is a great diversity between translators – 6 or 5 different versions.

01_ latin _order	02_latin _tokens	03_eng_ direct_ tokens	1656	1743	1872	1886	1916	1936	uniques
42	daedala	skilful / Daedalu s	th'iname l'd	art	plastic	manifol d	daedal	quaint	6
59	patefacta st	to lay open, open	brings	leads	unlocks	disclose d	comes	reveale d	6
113	incutiens	strike	infuse	inspir ing	infusing	striking	kindlin g	strike	6
129	gubernas	govern	reign	gover n	rulest	mistress	guidest	pilot	6
219	suspicien s	looking up	bending	back	looking	upturne d	backw ard	pillowi ng	6
250	loquellas	speech, words, chatter	accents	eloqu ence	words	discours e	syllabl es	petitio n	6
252	petens	seek, look for	require	implo re	Implori ng	asking	win	seekin g	6
260	agere	to act, lead, move	philosop hize	write	pursue	think	attend	set	6
263	tempore	times	whilst	times	hours	day	season	time	6

6	alma	nourishi ng	NaN	sweet	benigna nt	increase -giving	dear	life- giver	5
26	visitque	to look, view	beholdin g	view	behold	beholds	NaN	look	5
41	suavis	sweet, agreeabl e, grateful	sweet	sweet est	NaN	sweet- smelling	scente d	sweet- scente d	5
66	aura	wind, air (in motion), a breeze, wind	NaN	winds	breathe	breeze	blow	wind	5
91	capta	captivat ed, taken	NaN	please d	captive	prisoner	seized	enchai ned	5
106	rapacis	rapid, current, rapaciou s	rapid	swifte st	NaN	sweepin g	swift	tearing	5
118	efficis	succeed (you)	NaN	drives	causest	constrai nest	bringes t	makest	5
123	propagen t	propagat e, teem,	renews	propa gate	renewal	continue	NaN	renew	5
138	exoritur	arise	NaN	rise	arise	rises	risen	comes	5
233	pendet	hang, suspend	plac'd	hangs	suspend s	reclines	NaN	lies	5
241	recubant em	reclinin g	NaN	cling	recumbe nt	reposing	recline d	leans	5

1	aeneadum	Aenea	romes	rome	romans	aeneadae	rome	aeneas's	5
44	summittit	puts forth	submit	affords	spreads	puts	bears	puts	5
49	ponti	the sea / bridge	seas	sea's	ocean	sea	deep	ocean	5
76	perculsa	throw down, overturn,	touch	strikes	smit	smitten	smit	thrilled	5
85	laeta	joyful, cheerful, glad,	flowry	cheerful	glad	glad	happy	fat	5
108	domos	houses	roosts	forests	home	homes	homes	haunts	5
114	blandum	soothing, seductive	soft	tender	gentle	fond	lure	fond	5
141	laetum	happy	frolick	gay	joyous	glad	joyful	glad	5
146	sociam	be with, friend, associate,	ayde	companion	companion	helpmate	co-partner	helper	5
169	excellere	excell in	excell	grace	excel	peer	peerless	grace	5
206	in	in	on	in	upon	into	to	upon	5
220	tereti	round	round	long	rounded	shapely	full	shapely	5

264	iniquo	uneven, unjust, evil, wicked	afflicted	sad	adverse	trouble	troublo us	trouble	5
275	commun i	common , societal, of society	publike	comm on	commo n	general	civic	state	5
277	saluti	welfare, health	peace	good	weal	weal	cause	fortune s	5

Reflection on groups of words with great DIVERSITY:

(1) verbs – verb translation often truly differs amongst them; this means that the action can be expressed with many differing verbs still keeping close semantic distance to the original.

(2) nouns (loquellas, saluti) – these nouns are usually parts of larger noun phrases, where the sense is acquired by translating all of the phrase, and often it is done not by direct word-to-word translation, but finding some corresponding phrase in English.

(3) adjectives (daedala, alma, suavis, laeta) – translations are close in meaning, having synonymic relationship, sometimes even derived from the same root with different suffixes and embellishments.

3.4. Comparison of word order deviations in 6 translations relative to Latin

To analyze the differences between original Latin text and translation, one of the aspects was “word order” – does the English translations preserve the word order that is in Latin? There are several reasons to preserve and to not preserve. Reasons for – translation is a reflection of the original, therefore it should be as close to the original as possible. Against – sometimes to preserve the idea, flow and feeling of the original you have to transgress from the original in order to recreate that idea, flow and feeling in the target language. Nevertheless, looking at 6 translations it should be possible to compare which of them keeps closer to the original and which deviate more.

However, this analysis was complicated by the fact, that English translations have much more tokens than Latin original – therefore, if we start with indexing both texts and then comparing the position of similar tokens (in Latin and in English), the further text progresses, the greater the distance; e.g. if the last token in Latin is number 277, then in English it is 328 at least (1872en) and 473 at most (1936en).

edition year	words
latin.tok	277
1656en	358
1743en	426
1872en	328
1886en	443
1916en	392
1936en	473

Therefore, to make such analysis sensible, texts were aligned sentence-to-sentence. This was not straightforward task for several reasons – the punctuation in Latin original is sometimes ambiguous – commas, full-stops and other marks are not so common as in contemporary language, and sometimes it was not with absolute certainty to say where one sentences ends and the next starts. Because of that some “chunks” for alignment were shorter (10-15), and one was longer (40), while the median was around 20-25 words for fragment.

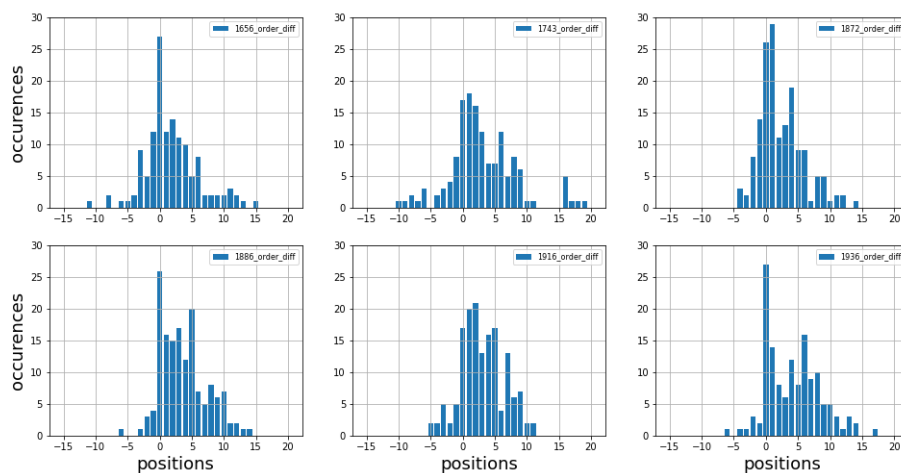
Fragment Nr	Latin text	Words in Latin	Fragment length
1	Aeneadum genetrix, hominum divomque voluptas, alma Venus, caeli subter labentia signa quae mare navigerum, quae terras frugiferentis concelebras, per te quoniam genus omne animantum concipitur visitque exortum lumina solis:	1-29	30
2	te, dea, te fugiunt venti, te nubila caeli adventumque tuum,	30-39	10
3	tibi suavis daedala tellus summittit flores, tibi rident aequora ponti placatumque nitet diffuso lumine caelum.	40-54	15
4	nam simul ac species patefactast verna diei et reserata viget genitabilis aura favoni, aeriae primum volucris te, diva, tuumque significant initum percussae corda tua vi.	55-79	15
5	inde ferae pecudes persultant pabula laeta et rapidos tranant amnis: ita capta lepore te sequitur cupide quo quamque inducere pergis.	80-99	20

6	denique per maria ac montis fluviosque rapacis frondiferasque domos avium camposque virentis omnibus incutiens blandum per pectora amorem efficis ut cupide generatim saecula propagent.	100- 123	24
7	quae quoniam rerum naturam sola gubernas nec sine te quicquam dias in luminis oras exoritur neque fit laetum neque amabile quicquam, te sociam studeo scribendis versibus esse,	124- 150	27
8	quos ego de rerum natura pangere conor Memmiadae nostro, quem tu, dea, tempore in omni omnibus ornatum voluisti excellere rebus.	151- 170	20
9	quo magis aeternum da dictis, diva, leporem. effice ut interea fera moenera militiai per maria ac terras omnis sopita quiescant;	171- 190	20
10	nam tu sola potes tranquilla pace iuvare mortalis, quoniam belli fera moenera Mavors armipotens regit, in gremium qui saepe tuum se reiecit aeterno devictus vulnere amoris,	191- 216	26
11	atque ita suspiciens tereti cervice reposta pascit amore avidos inhians in te, dea, visus eque tuo pendet resupini spiritus ore. hunc tu, diva, tuo recubantem corpore sancto circum fusa super, suavis ex ore loquellas funde petens placidam Romanis, incluta, pacem;	217- 256	40
12	nam neque nos agere hoc patriai tempore iniquo possumus aequo animo nec Memmi clara propago talibus in rebus communi desse saluti.	257- 277	21

For the purposes of analysis Latin text was cut in 12 “fragments” and English text was aligned to them. Of 12 fragments 6 are cut on a full-stop, 1 on a colon, 3 on a comma, 2 on a semicolon. Cut between fragments 2 and 3 are in the middle of the line, all other cuts are at the end of line. In fragment 9 there are 2 sentences, first of them ends with a full-stop, second is cut at a semicolon. Fragment 11 also contains 2 sentences, as in 1743en translation these sentences are intertwined and cannot be separated.

Analysis of word order deviation in translations

Looking at 6 barcharts, and taking in consideration that English fragments were proportionally longer than Latin, there are few points to bear in mind: (1) the propensity of English positions to grow as translation sentences get longer – that explains partly why the distribution of English is more to the plus (+) side of deviation; (2) negative (–) deviation can be obtained not from the very start of the fragment, as English word cannot correspond to the Latin word of previous sentence – this further adds to the larger deviation towards plus (+) side.



Some reflections on word order deviation:

- (1) for the last 4 translations the deviation interval is from -5 to +15 (with a few outliers). For the first two translation the interval is greater.
- (2) for the 1743en translation there is a cluster of words at interval (+15, +20). That can, perhaps, be explained with the fact that 1743en translation preserves the meter and rhymes at the end of lines and for that purpose some reposition of phrases was done.
- (3) the highest peak in all 6 graphs is around position 0, which tells that all translations are following the Latin word order to some extent. For translations 1656en and 1936en the 0 position is almost twice as common (27 occurrences) as the next most frequent value (14, 16 occurrences). Whereas for 1743en and 1916en the values around 0 position (-1, 0, +1) are more evenly spread out.

4. Conclusions

- * Initial idea to compare meter and rhyme was not doable, as there was not enough meter and rhyme preserved in 6 translations.
- * Method of “ahistorical reading” of texts in principle gave good results, although some precautions about results should be kept, as texts worked with were not source files, therefore possibly altered versions.
- * A decision to analyze closely 42 lines of original and 6 translations proved to be very, very time consuming. And although the results obtained were interesting, with lacking total scientific rigor (because of working with copies not sources), it was more a learning process than results-oriented.
- * Tokens count in Latin and English revealed some surprising facts – English texts were 29% to 70% longer than Latin original. However, English words having a corresponding word in Latin text was varying from 62% to 87%. Thus, it can be said that translations were quite far away from original if we look at word-to-word level, while on the semantic level all of the translations created a sufficient level of coherency and correspondence.

* Close reading linguistic, stylistic and semantic analysis revealed important aspects of different treatment of different parts of speech in translations – nouns and adjectives very translated most closely, while translation of verbs provided the greatest variance. This, perhaps, reveal an interesting feature about the way we use language – nouns are more mono-semantic, while verbs acquire their meaning depending on the context.

* Different treatment of proper names and their translation was encountered, however, there cannot be drawn conclusive summary about practices from such a short text. However, it was several times noted that later editions are using more archaic forms and vice versa. More research would be necessary to state is that because of individual taste of translators or because of prevailing conventions of the era.

* Comparison of word order deviation in translations relative to Latin original was very time consuming, but results were rather undecided. First major obstacle to meaningful analysis was radically larger tokens count in English (29% to 70% more). It made impossible to align both texts as “parallel texts”. A decision was made to align on sentence-to-sentence level. This was quite hard because of ambiguous punctuation in Latin, and decisions of translators to occasionally transgress borders of sentences. Looking at calculations derived from comparison of sentences (or parts of sentences), the result stated the obvious – that most words tend to occur at 0, -1 or +1 positions – or, to put in another way, that translators largely adhere to the original word order. However, where there were deviations it was almost impossible to tell do they derive from individual decisions of translator to transpose the word order, or because of larger tokens amount in English text.

5. Appendices:

5.1. Latin text (line 1 to 42 from Book 1):

URL to Lucretius text used in Research (last accessed 15.01.2022):

<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.02.0130>

Aeneadum genetrix, hominum divomque voluptas,
alma Venus, caeli subter labentia signa
quae mare navigerum, quae terras frugiferentis
concelebras, per te quoniam genus omne animantum
concipitur visitque exortum lumina solis:
te, dea, te fugiunt venti, te nubila caeli
adventumque tuum, tibi suavis daedala tellus
summittit flores, tibi rident aequora ponti
placatumque nitet diffuso lumine caelum.
nam simul ac species patefactast verna diei
et reserata viget genitabilis aura favoni,
aeriae primum volucris te, diva, tuumque
significant initum percussae corda tua vi.
inde ferae pecudes persultant pabula laeta
et rapidos tranant amnis: ita capta lepore
te sequitur cupide quo quamque inducere pergis.
denique per maria ac montis fluviosque rapacis

frondiferasque domos avium camposque virentis
omnibus incutiens blandum per pectora amorem
efficis ut cupide generatim saecula propagent.
quae quoniam rerum naturam sola gubernas
nec sine te quicquam dias in luminis oras
exoritur neque fit laetum neque amabile quicquam,
te sociam studeo scribendis versibus esse,
quos ego de rerum natura pangere conor
Memmiadae nostro, quem tu, dea, tempore in omni
omnibus ornatum voluisti excellere rebus.
quo magis aeternum da dictis, diva, leporem.
effice ut interea fera moenera militiai
per maria ac terras omnis sopita quiescant;
nam tu sola potes tranquilla pace iuvare
mortalis, quoniam belli fera moenera Mavors
armipotens regit, in gremium qui saepe tuum se
reiicit aeterno devictus vulnere amoris,
atque ita suspiciens tereti cervice reposta
pascit amore avidos inhians in te, dea, visus
eque tuo pendet resupini spiritus ore.
hunc tu, diva, tuo recubantem corpore sancto
circum fusa super, suavis ex ore loquellas
funde petens placidam Romanis, incluta, pacem;
nam neque nos agere hoc patriai tempore iniquo
possumus aequo animo nec Memmi clara propago
talibus in rebus communi desse saluti.

5.2. Six English translations

1656en
ROMES Parent Venus, joy of Gods above
And Men, who under those bright signs that move
In heaven, dost all comfort bring and mirth
To the ship-bearing Seas, Corn-bearing Earth;
By thee conceiv'd since all things living be
Beholding the Suns light, the Winds do flee
O Goddess, and the clouds which skies benight
Are dissipated, when thou com'st in sight
Smooth seas and heavens smile; under thy feet
Th'inamel'd earth doth her sweet flowers submit;
For when the Springs return brings the clear day
And Genial West with kindly gales doth play,
First aery birds, whose brest thy powrdoth touch
Chant forth (o Goddess) thee & thine approach:
Then savage Bruits jump ore the flowry meads,
Or take the streams, where ere thy beauty leads,
Each Creature doth with eager passion goe;
Lastly, through Seas, and Hills, where Rivers flow

With rapid course; or where the Birds do build
 Their leafie roosts, and through the verdant field,
 Soft flames thou dost in every breast infuse;
 So a fresh Off-spring still the Age renews.
 Since then ore Nature thou sole Queen dost reign,
 Nor ought without thee may the light attain,
 Or can be frolick, or be pleasant made;
 Assist these studious numbers with thine ayde,
 Which I essay of Natures works to tell
 For honor'd Memmius, who doth most excell
 By thee accomplit; Goddess, O bestow
 Eternal grace on what from me shall flow,
 That whilst I write, by Seas and land may cease
 Fire Wars clos'd in an everlasting peace:
 To Mortals thou alone canst rest afford;
 Since Mars, who is of direful wars, the Lord,
 On thy fair Bosom resting oft his head
 With lasting wounds of Love is vanquished,
 And bending his round neck which on thee lyes,
 With greedy passion feeds his amorous eyes;
 Whilst on thy lips his fainting soul is plac'd,
 And he within those sacred arms enchanc'd;
 Let charming accents thy sweet lips inspire,
 And for sad Rome an happy peace require;
 For whilst our Countrey thus afflicted lies,
 With what content oan we Philosophize!
 Nor may brave Memmius then wanting be
 To th' Publike peace in such perplexitie.

1743en

MOTHER of Rome, Delight of Men and Gods, Sweet Venus; who with vital power
 dost fill the sea bearing the ships, the fruitful Earth, all things beneath the rolling signs
 of Heaven; for 'tis by Thee creatures of every kind conceive, rise into life, and view
 the Sun's bright beams. Thee Goddess, Thee the winds avoid; the clouds fly Thee,
 and thy approach; with various art the Earth for Thee affords her sweetest flowers; for
 Thee the sea's rough waves put on their smiles, and the smooth sky shines with
 diffused light. For when the buxom Spring leads on the year, and genial gales of
 western winds blow fresh, unlock'd from Winter's cold, the airy birds first feel Thee
 Goddess, and express thy power; thy active flame strikes though their very souls. And
 then the savage beasts, with wanton play, frisk o'er the cheerful fields, and swim the
 rapid streams. So pleased with thy sweetness, so transported by thy soft charms, all
 living Nature strives, with sharp desire, to follow Thee, her Guide, where Thou art
 pleased to lead. In short, Thy power, inspiring every breast with tender love, drives
 every creature on with eager heat, in seas, in mountains, and in swiftest floods, in
 leafy forests, and in verdant plains, to propagate their kind from age to age.

Since Thou alone dost govern Nature's laws, and nothing without Thee can rise to
 light, without Thee nothing can look gay or lovely; I beg Thee a companion to my
 lays, which now I sing of Nature, I devote to my dear Memmius, whom Thou art ever

pleased, sweet Goddess, to adorn with every grace; for him, kind Deity, inspire my song, and give immortal beauty to my verse. Mean time, the bloody tumults of the war by sea and land compose, and lay asleep. For Thou alone mankind with quiet peace canst bless; because 'tis Mars Armipotent that rules the bloody tumults of the war, and He by everlasting pains of love bound fast, tastes in Thy lap most sweet repose, turns back his smooth long neck, and views thy charms, and greedily sucks love at both his eyes. Supinely as he rests his very soul hangs on thy lips; this God dissolv'd in ease, in the soft moments when thy heavenly limbs cling round him, melting with eloquence caress, great Goddess, and implore a peace for Rome.

For neither can I write with cheerful strains, in times so sad, nor can the noble House of Memmius desert the common good in such distress of things.

1872en

Mother of Romans ! joy of men and gods,
Benignant Venus ! thou whose presence fills
All things beneath the gliding signs of heaven,
Throughout ship-bearing seas, corn-bearing lands —
Since 'tis through thy soft influence conceived
All living things rise to behold the light —
Before thee, Goddess ! thee ! the winds are hushed,
Before thy coming are the clouds dispersed,
The plastic earth spreads flowers before thy feet,
Thy presence makes the plains of ocean smile,
The sky shine placid with diffused light.
Soon as the vernal day unlocks the year,
And zephyrs breathe their fecundating breath,
The aerial birds, smit by thy genial power,
Goddess divine, blithe herald thy approach ;
The untamed herds o'er the glad pastures bound
And swim the rapid streams ; thus, by thy charms
Ta'en captive, all that lives with eager pant
Follow thy influence wheresoe'er it leads.
Then through all seas, the mountains and the streams,
The leafy home of birds, the verdant plains,
Infusing gentle love to every breast,
Thou causest glad renewal of their tribes.
Since thou alone all Nature rulest thus,
Nor without thee can aught to light arise,
Nor can aught joyous or aught lovely be,
Oh ! be thou then companion to the verse
Which I for Memmius essay to frame
On the true form and nature of all things,
For him whom, Goddess, thou would'st have excel,
With every grace adorned. The rather, then,
Immortal grace give, Goddess, to my words,
And cause meanwhile that the fierce arts of war
Throughout all seas and lands, hushed to repose,
May rest. For thou alone with tranquil peace

Canst mortals bless, since Mars, potent in arms,
 Rules war, who oft upon thy bosom sinks
 O'erpowered and bound by love's eternal wound.
 Thence looking up with rounded neck turned back,
 And lips apart, feeding his gaze with love,
 Supine suspends his breath upon thy mouth.
 O'er him recumbent hang thy sacred form,
 And thus pour thou from thy sweet lips sweet words,
 Imploring, Goddess, placid peace for Rome.
 For neither in our country's adverse hours,
 Can I with tranquil mind this theme pursue,
 Nor can a scion of the Memmian stock,
 Be such time wanting to the common weal.

1886en

MOTHER of the Aeneadae, darling of men and gods, increase-giving Venus, who
 beneath the gliding signs of heaven fillest with thy presence the ship-carrying sea, the
 corn-bearing lands, since through thee every kind of living things is conceived, rises
 up and beholds the light of the sun. Before thee, goddess, flee the winds, the clouds of
 heaven, before thee and thy advent; for thee earth, manifold in works, puts forth
 sweet-smelling flowers; for thee the levels of the sea do laugh and heaven propitiated
 shines with outspread light. For soon as the vernal aspect of day is disclosed, and the
 birth-favoring breeze of Favonius unbarred is blowing fresh, first the fowls of the air,
 O lady, show signs of thee and thy entering in, thoroughly smitten in heart by thy
 power. Next the wild herds bound over the glad pastures and swim the rapid rivers: in
 such wise each made prisoner by thy charms follows thee with desire, whither thou
 goest to lead it on. Yes, throughout seas and mountains and sweeping rivers and leafy
 homes of birds and grassy plains, striking fond love into the breasts of all thou
 constrainest them each after its kind to continue their races with desire.

Since thou then art sole mistress of the nature of things and without thee nothing rises
 up into the divine borders of light, nothing grows to be glad or lovely, fain would I
 have thee for a helpmate in writing the verses which I essay to pen on the nature of
 things for our own son of the Memmii, whom thou, goddess, hast willed to have no
 peer, rich as he ever is in every grace. Wherefore all the more, O lady, lend my lays
 an everliving charm. Cause meanwhile the savage works of war to be lulled to rest
 throughout all seas and lands; for thou alone canst bless mankind with calm peace,
 seeing that Mavors lord of battle controls the savage works of war, Mavors who often
 flings himself into thy lap quite vanquished by the never-healing wound of love; and
 then with upturned face and shapely neck thrown back feeds with love his greedy
 sight gazing, goddess, open-mouthed on thee; and as backward he reclines, his breath
 stays hanging on thy lips While then, lady, he is reposing on thy holy body, shed
 thyself about him and above, and pour from thy lips sweet discourse, asking, glorious
 dame, gentle peace for the Romans.

For neither can we in our country's day of trouble with untroubled mind think only of
 our work, nor can the illustrious offset of Memmius in times like these be wanting to
 the general weal.

1916en

Mother of Rome, delight of Gods and men,
Dear Venus that beneath the gliding stars
Makest to teem the many-voyaged main
And fruitful lands--for all of living things
Through thee alone are evermore conceived,
Through thee are risen to visit the great sun--
Before thee, Goddess, and thy coming on,
Flee stormy wind and massy cloud away,
For thee the daedal Earth bears scented flowers,
For thee waters of the unvexed deep
Smile, and the hollows of the serene sky
Glow with diffused radiance for thee!
For soon as comes the springtime face of day,
And procreant gales blow from the West unbarred,
First fowls of air, smit to the heart by thee,
Foretoken thy approach, O thou Divine,
And leap the wild herds round the happy fields
Or swim the bounding torrents. Thus amain,
Seized with the spell, all creatures follow thee
Whithersoever thou walkest forth to lead,
And thence through seas and mountains and swift streams,
Through leafy homes of birds and greening plains,
Kindling the lure of love in every breast,
Thou bringest the eternal generations forth,
Kind after kind. And since 'tis thou alone
Guidest the Cosmos, and without thee naught
Is risen to reach the shining shores of light,
Nor aught of joyful or of lovely born,
Thee do I crave co-partner in that verse
Which I presume on Nature to compose
For Memmius mine, whom thou hast willed to be
Peerless in every grace at every hour--
Wherefore indeed, Divine one, give my words
Immortal charm. Lull to a timely rest
O'er sea and land the savage works of war,
For thou alone hast power with public peace
To aid mortality; since he who rules
The savage works of battle, puissant Mars,
How often to thy bosom flings his strength
O'er-mastered by the eternal wound of love--
And there, with eyes and full throat backward thrown,
Gazing, my Goddess, open-mouthed at thee,
Pastures on love his greedy sight, his breath
Hanging upon thy lips. Him thus reclined
Fill with thy holy body, round, above!
Pour from those lips soft syllables to win
Peace for the Romans, glorious Lady, peace!

For in a season troublous to the state
Neither may I attend this task of mine
With thought untroubled, nor mid such events
The illustrious scion of the Memmian house
Neglect the civic cause.

1936en

MOTHER of Aeneas's sons, joy of men and gods, Venus the life-giver, who beneath the gliding stars of heaven fillest with life the sea that carries the ships and the land that bears the crops; for thanks to thee every tribe of living things is conceived, and comes forth to look upon the light of the sun. Thou, goddess, thou dost turn to flight the winds and the clouds of heaven, thou at thy coming; for thee earth, the quaint artificer, puts forth her sweet-scented flowers; for thee the levels of ocean smile, and the sky, its anger past, gleams with spreading light. For when once the face of the spring day is revealed and the teeming breeze of the west wind is loosed from prison and blows strong, first the birds in high heaven herald thee, goddess, and thine approach, their hearts thrilled with thy might. Then the tame beasts grow wild and bound over the fat pastures, and swim the racing rivers; so surely enchained by thy charm each follows thee in hot desire whither thou goest before to lead him on. Yea, through seas and mountains and tearing rivers and the leafy haunts of birds and verdant plains thou dost strike fond love into the hearts of all, and makest them in hot desire to renew the stock of their races, each after his own kind.

And since thou alone art pilot to the nature of things, and nothing without thine aid comes forth into the bright coasts of light, nor waxes glad nor lovely, I long that thou shouldest be my helper in writing these verses, which I essay to trace on the nature of things for the son of the Memmii, my friend, whom thou, goddess, through all his life hast willed to be bright with every grace beyond his fellows. Therefore the more, goddess, grant a lasting loveliness to my words. Bring it to pass that meantime the wild works of warfare may be lulled to sleep over all seas and lands. For thou only canst bless mortal men with quiet peace, since 'tis Mavors, the lord of hosts, who guides the wild works of war, and he upon thy lap oft flings himself back, conquered by the eternal wound of love; and then pillowing his shapely neck upon thee and looking up he feeds with love his greedy eyes, gazing wistfully towards thee, while, as he lies back, his breath hangs upon thy lips. Do thou, goddess, as he leans resting on thy sacred limbs, bend to embrace him and pour forth sweet petition from thy lips, seeking, great lady, gentle peace for the Romans. For neither can we in our country's time of trouble set to our task with mind undistressed, nor amid such doings can Memmius's noble son fail the fortunes of the state.