

## THE FIRST TRANSLATION OF AN ACADEMIC ARTICLE (PHILOSOPHICAL TRANSACTIONS, 6 MARCH, 1665)

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**Abstract:** *The first two academic periodicals were the Journal des Sçavans and the Philosophical Transactions which appeared within two months of each other in early 1665. At that time France was totally stable and centralized, while England was just emerging from a half-century of chaos. The first issue of the Philosophical Transactions included an item translated from the Journal des Sçavans. Study of these two texts shows that the English translator (Oldenburg) attempted to tidy up the French text. Analysis of the thematic structure, in comparison with a larger sample for the year 1665, shows that Oldenburg aligns his translation with his source text. Analysis of the process types shows that the percentages of process types are similar for the two texts, with the exception of verbal process. This seems to indicate a desire on the part of Oldenburg the attribute the discourse to someone else. These two texts are of particular importance as the first example of the translation of an academic article..*

**Keywords:** Journal des Sçavans, Philosophical Transactions, process type, seventeenth century, thematic structure, translation.

### 1. INTRODUCTORY REMARKS

The history of the academic journal article started on 5 January 1665. On that day the first issue of the very first academic periodical appeared. It was the *Journal des Sçavans*. It came out in Paris and was edited by Denis de Sallo, though at the instigation of Louis XIV's first minister, Colbert. This issue was presented to the Royal Society of London only six days later, on 11 January 1665, (which seems to me pretty good going for the late seventeenth century!) (Morgan, 1928; Lyons, 1944).

Two months later, on 6 March 1665, the first issue of the *Philosophical Transactions* appeared in London. This was the brainchild of Henry Oldenburg, one of the secretaries of the Royal Society. Curiously, both of these publications still exist, though they have undergone some modification in the intervening three and a half centuries (Bluhm, 1960; Hall, 2002; Kronick, 1991).

The first issue of the *Philosophical Transactions* included an item which is a translation of an item in the first issue of the *Journal des Sçavans*. So this item counts as the first ever translation of an academic article. As such it has historical significance, and it is this translation that I would like to consider in this article. However, I feel that it is necessary to first fill in some of the historical background, and this will constitute section 2 of the article below. This is important since I believe that context plays a significant role in the creation of text. A text arises out of, and is hence influenced by, the context within which it is created. It subsequently becomes part of the context, thus changing the context to that extent. So, context and text are involved in a constant mutual relationship of influence and change. The early issues of the *Journal des Sçavans* and the *Philosophical Transactions* are an excellent example of this process (Banks, 2017a).

The linguistic framework of the article is that of Systemic Functional Linguistics (Halliday, 2014; Banks, 2005, 2017b). Systemic Functional Linguistics sees text in terms of three metafunctions: ideational, interpersonal, and textual. The ideational metafunction deals with the representation of the world, the interpersonal metafunction with the relationships established by the speaker, and the textual metafunction with the construction of the message. A major feature of the textual metafunction is thematic structure, which analyses the clause into a

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theme and a rheme, where theme is defined as being the speaker's starting point, and is realized in English and in French by being placed in initial position in the clause. Thematic structure has been termed the driving force of scientific discourse (Halliday, 1988, 1998, Banks, 2008a, b). For these reasons section 3.1 of the article deals with an analysis of the thematic structures of the source text and its translation.

The main feature of the ideational metafunction is transitivity. In systemic functional Linguistics this is the relationship between a process, its participants, and, if there are any, the accompanying circumstances. The central element in this is the process, which thus constitutes the centre of the way the text represents the external world. Consequently the third part of the article analyses the processes realized by the finite verbs in the two texts.

The study presented here<sup>1</sup> is part of an ongoing research project comparing the *Journal des Sçavans* and the *Philosophical Transactions* for the period 1665 to 1700, and which includes Banks, 2009, 2010, 2012, 2013a and 2017a.

## 2. SOME HISTORICAL BACKGROUND

### 2.1 FRANCE AND ENGLAND IN THE SEVENTEENTH CENTURY

I feel that all texts are the emanation of the historical situation within which they are created, and of which they are part. They can only be understood as part of their historical context. It is therefore necessary at this point, to give a brief overview of the situation in France and England in the seventeenth century.

Louis XIV came to the throne of France in 1643. He was only 5 years old at the time, and so there was a regency during the first part of his reign. The regency came to an end in 1661, on the death of Mazarin, and Louis XIV took over full control of the state. Colbert became his first minister. France rapidly became the financial and cultural centre of Europe. The system in place was that of absolute monarchy, and this was ruthlessly enforced. France was totally centralized, and totally stable (Gignoux, 1941).

The situation in England was rather different. In 1605 the Gunpowder Plot had failed, and James I went on to reign until his death in 1625. He was succeeded by Charles I, but his reign was far from easy. In 1638 war broke out in Scotland; in 1641 there was a rebellion in Ireland; and finally in 1642 the Civil War erupted in England. This culminated in 1649 with the execution by beheading of Charles I, to be followed by the Interregnum under the rule of Cromwell. Cromwell died in 1658, but his son, who had been appointed to follow him, was not keen on the idea, which left the way open for the Restoration of the monarchy. This was effected in 1660 when Charles II was restored to the throne of England. Among the non-political difficulties he had to face were the Black Death which reached London in 1665, and the Great Fire which destroyed 80% of the city in 1666. However, the political difficulties which beset him were, if anything, greater, but he battled on until his death in 1685, when he was succeeded by his brother, James II. Under James, the political difficulties were exacerbated, until in 1688 the Glorious Revolution took place, a bloodless coup d'état whereby James' opponents invited William and Mary to take over the throne of England, and James II fled to exile in France. Traditionally, this is counted as the beginning of the constitutional monarchy (Clark, 1956; Hill, 1961; Kishlansky, 1996).

Thus, the overall picture of France in the second half of the seventeenth century is one of total stability, that in England, of total chaos. This has a direct bearing on the texts which were produced in the two periodicals we are interested in.

### 2.2 THE FIRST TWO ACADEMIC JOURNALS

The *Journal des Sçavans* was founded by Denis de Sallo, at the instigation of Colbert. Colbert's objective was state control. He saw new knowledge as a possible danger to the state, and hence something that had to be controlled, and even subverted to the greater glory of the Sun King, Louis XIV (Gignoux, 1941; Licoppe, 1996). The new knowledge of the time appeared in books, and so it was that the *Journal des Sçavans* became essentially a journal of book reviews, or we might say book notices, since they were usually fairly short. Moreover, if one is to control new knowledge, then it must include all new knowledge; there is no point in excluding anything. So the *Journal des Sçavans* covered all areas of new knowledge, including law, theology, history, and so on (Banks, 2009a).

The *Philosophical Transactions*, on the other hand, was a private enterprise, begun by Henry Oldenburg, one of the two secretaries of the Royal Society. Unlike the majority of the members of the Royal Society, he was not a man of private means, and the *Philosophical Transactions* was conceived of as a way of augmenting his income and making ends meet. He had become the centre of a network of correspondence. The nature of this correspondence was rather like that of open letters. It was the intention of the authors that they should be copied and sent on,

<sup>1</sup> An earlier version of this paper was read at the 25<sup>th</sup> European Systemic Functional Linguistics Conference, Université Paris Diderot, 10-12 July 2014.

read at meetings, and in general disseminated as widely as possible (Banks, 2013b; Gotti, 2006; Kronick, 2004). Oldenburg's idea was to create a bulletin of news, which he could offer for sale. This idea had the blessing of the Royal Society, and although many considered it a publication of the Royal Society, in fact, it remained the private property of Oldenburg, who had full editorial and financial responsibility for it. His readership was made up of the members and friends of the Royal Society, and so its scope was restricted to "natural philosophy" or science and technology. Initially Oldenburg wrote up news items on the basis of the letters he received, but very rapidly he began printing extracts from letters, and some people began sending him papers for publication with a simple covering letter (Bluhm, 1960; Hall, 2002; Banks, 2009a, b).

Thus, the two journals were different in genre, and different in scope. The *Journal des Sçavans* was mainly book reviews, while the *Philosophical Transactions* depended on what turned up in Oldenburg's postbag, and the *Journal des Sçavans* dealt with the full range of new knowledge, while the *Philosophical Transactions* was restricted to science and technology. These editorial decisions are reflected in the linguistic features to be found in the two publications (Banks, 2017a)

### 3. THE FIRST TRANSLATION

The first issue of the *Journal des Sçavans* carried a review of a book by the Italian scientist Campani on the grinding of lenses for telescopes. The review is in French, although the original book was in Italian. The first issue of the *Philosophical Transactions* has an item headed "An Accompt of the Improvement of Optick Glasses" which is a translation of the item which had appeared in the *Journal des Sçavans*.

If the two texts are placed side by side (see Figure 1), it can be seen that the first two paragraphs are different, but that thereafter the sections are in parallel, with the exception of the last which has no equivalent in the English version.

Figure 1. French text and English translation in parallel.

<i>RAGGVAGLIO DI NVOVE OSSERVATIONI, da Giuseppe Campani. .in 12. In Roma.</i>	<i>An Accompt of the improvement of Optick Glasses</i>
Il y a trois choses principales à observer dans cet ouvrage.	There came lately from <i>Paris</i> a Relation concerning the Improvement of <i>Optick Glasses</i> , not long since attempted at <i>Rome</i> by Signor <i>Giuseppe Campani</i> , and by him discoursed of, in a Book, Entituled, <i>Ragguaglio di Nuoue Ossevationi</i> , lately printed in the said city, but not yet transmitted into these parts; wherein these following particulars, according to the Intelligence, which was sent hither, are contained.
La premiere regarde l'excellence des grandes Lunettes d'approche faites par Campani. Surquoy il faut remarquer.	The First regardeth the excellency of the long <i>Telescopes</i> , made by the said Campani,
Premierement qu'il pretend auoir trouué le moyen de traouiller aux grandes Lunettes avec vn tour iusqu'à present inconnu.	who pretends to have found a way to work great <i>Optick Glasses</i> with a Turne-stool, without any Mould.
Secondement, au lieu qu'on auoit iusqu'à maintenant experimenté que les petites Lunettes sont à proportion meilleures pour voir sur le terre que les grandes : il dit en auoir fait qui sont également bonnes à voir sur la terre, & à observer dans le Ciel.	And whereas hitherto it hath been found by Experience, that <i>small</i> Glasses are in proportion better to see with, upon the Earth, than the <i>great</i> ones; that Author affirms, that his are equally good for the Earth, and for making Observations in the Heavens.
En troisieme lieu, il met trois oculaires à ses grandes Lunettes, sans qu'elles fassent voir d'Iris ; ce qu'on ne sçaurait faire avec les Lunettes ordinaires.	Besides, he useth three Eye-Glasses for his great <i>Telescopes</i> , without finding any <i>Iris</i> , or such Rain-bow colours, as do usually appear in ordinary Glasses, and prove an impediment to Observations.

Figure 1 continues on next page

Figure 1 continues from the previous page

RAGGVAGLIO DI NVOVE OSSERVATIONI, da Giuseppe Campani. .in 12. In Roma.	An Accompt of the improvement of Optick Glasses
<p>Sa seconde obseruation concerne le cercle de Saturne, dans lequel il n'a rien découuert de nouueau ; mais où il a seulement confirmé ce que Huggens en a publié dés l'année 1659. dans son liure du Systême de Saturne.</p>	<p>The <i>Second</i>, concerns the <i>Circle of Saturn</i>, in which he hath observed nothing, but what confirms Monsieur <i>Christian Huygens de Zulichem</i> his <i>Systeme</i> of that <i>Planet</i>, published by that worth Gentleman in the year, 1659.</p>
<p>La troisieme Obseruation regarde Iupiter, dans lequel il a remarqué par la bonté de ses Lunettes, des aduances &amp; des inégalitéz beaucoup plus grandes que celles qu'on y auoit veuës iusques à present.</p>	<p>The <i>Third</i>, respects <i>Jupiter</i>, wherein <i>Campani</i> affirms he hath observed by the goodness of his Glasses, certain <i>protuberancies</i> and <i>inequalities</i>, much greater than those that have been seen therein hitherto.</p>
<p>Il obserue maintenant, afin de remarquer si ces saillies ne changent point de situation : auquel cas il seroit constant que Iupiter tourneroit sur son axe. Ce qui seruiroit beaucoup à confirmer l'opinion de Copernic.</p>	<p>He addeth, that he is now observing, whether those sallies in the said <i>Planet</i> do not change their scituation, which if they should be found to do so, he judgeth, that <i>Jupiter</i> might then be said to turn upon his <i>Axe</i>; which, in his opinion would serve much to confirm the opinion of <i>Copernicus</i>.</p>
<p>De plus, il a remarqué dans les bandes de Iupiter, les ombres des Lunes ou satellites de cette planete, les a suiuiés, &amp; enfin les a veuës sortir du disque.</p>	<p>Besides this, he affirms, he hath remarked in the <i>Belts</i> of <i>Jupiter</i>, the shadows of his <i>satellites</i>, and followed them, and at length seen them emerge out of his <i>Disk</i>.</p>
<p>Si cette obseruation se trouve veritable, il faudre reconnoistre que les Lunettes de Campani vallent mieux que les autres : puisque de tous ceux qui ont obserué dans l'Europe en mesme temps que luy il est le seul qui ait remarqué ces ombres : les vns ne pouuans pas s'imaginer qu'on les pust voir : &amp; les autres ne les ayant veuës que comme des auances &amp; des saillies dans les bandes de cette planete.</p>	

Although the first paragraph is considerably longer in the English version, this is because it contains extra information, but also the bibliographical information to be found in the heading of the original. The final paragraph in the French version contains critical comments which are absent in the English. Thus the structure has eight main sections preceded by an introduction and followed by a critical conclusion in the French only. The eight sections are written as seven paragraphs in the French, but only three in the English version. However, if one considers the beginnings of the first six of these (see Figure 2), the French version seems initially confusing.

Figure 2. Beginnings of sections 1-6.

La premiere	The First
Premierement	
Secondement	
En troisieme lieu	
Sa seconde obseruation	The <i>Second</i>
La troisieme Obseruation	The <i>Third</i>

The French introduction mentions “trois choses” (three things), but the sequence in the following paragraph beginnings, first – first – second – third – second – third, is far from clear. The confusion arises, because the writer has subdivided his first point into three subsections. The English version which, in its introduction, talks about “these following particulars” has only three paragraphs which begin “The First”, “The *Second*”, “The *Third*”; this seems clearer. So it would seem that Oldenburg is, to some extent, tidying up the French text.

## 4. ANALYSIS OF THE TEXTS

### 4.1 THEMATIC STRUCTURE

Thematic structure relates to the structure of a clause. A clause is said to have two parts, a theme and a rheme, where the theme is defined as the speaker's starting point, and in English is placed at the beginning of the clause. The theme is thus a highlighted element in the clause, and the choice of themes throughout a text, known as thematic progression, is an important aspect of the way the argumentation of the text is structured.

The analysis of theme presented here is based on that usual in Systemic Functional Linguistics (Halliday, 2014; Banks, 2005, 2017b), that is: each ranking clause (main or coordinate) has one topical theme, which is the first major component (subject, circumstantial adjunct, predicator or complement) of the clause; the topical theme may be preceded by one or more textual or interpersonal themes. Textual themes link the clause to the rest of the discourse; interpersonal themes indicate the speaker's attitude. There were no interpersonal themes in the two texts under study.

I will now consider in detail the themes of both texts (excluding the final paragraph of the French text) and how they relate to one another. I will then look briefly at what the topical themes refer to, and compare this with the results from a more general sample of texts taken from the two periodicals.

The French text has an existential *Il* (in the expression *Il y a*) as topical theme. This is paralleled in the English by a non-referential *There*; this is not existential for the following verb is *come*. While fairly common in the seventeenth century such constructions have become rare, if not obsolete, in present day English.

The first of the following sections has *La premiere* as topical theme in the French, and *The First* in the English. This is straightforward, and requires no comment.

The second section of the French begins *Premierement qu'il*. This can be seen as two textual themes followed by the topical theme, *il*. However, some might prefer to think of this as a projection (that is, in this case, indirect speech) following *il faut remarquer*. This will depend on how much weight is attached to punctuation, given the full stop after *remarquer*. It is also true that the expression *il faut remarquer* would normally require some sort of complementation. The English is a continuation of the previous clause complex. Thus, *who* functions as topical theme of its clause, but this is not a ranking clause.

In the third section the French text is divided in the middle by a colon. The question then arises as to whether this should be considered as a single ranking clause or whether the colon separates two ranking clauses. If it is a single ranking clause (and this would be my preferred reading), then the segment before the colon functions as a clausal topical theme. If however, it is read as two ranking clauses, the first would have *on* as topical theme preceded by two textual themes, *Secondement*, and *au lieu qu(e)*. The second ranking clause would then have *il* as topical theme. The same could be said of the English version, where, read as a single ranking clause, the segment before the semi-colon functions as a clausal topical theme; read as two ranking clauses, the first would have the circumstantial adjunct *hitherto* as topical theme preceded by *And* and *whereas* as textual themes, and the second with *that Author* as topical theme. Once again the first of these options seems the more likely.

The fourth section has, straightforwardly, a textual theme followed by *il* as topical theme in the French, and a textual theme followed by *he* in the English.

The French version of the fifth section has two ranking clauses. The first has *Sa seconde obseruation* as topical theme and the second has a textual theme, *mais*, and the circumstantial adjunct *où* as topical theme. The English has a single ranking clause with *The Second* as topical theme.

The sixth section is again straightforward with *La troisieme obseruation* and *The Third* as topical themes.

The seventh section of the French begins with *Il* as topical theme. However, it is not clear whether *auquel cas* should be considered the beginning of a new ranking clause, or whether it should be read as a relative, roughly "in which case". The English clearly has a relative clause so there is only one ranking clause with *He* as topical theme.

The final section is again straightforward with a textual and topical theme in both: *De plus* and *il* in the French and *Besides this* and *he* in the English.

If we exclude the introductions in both and the final concluding section in the French, then there are five textual themes and nine topical themes (or ten if *auquel cas* is included) in the *Journal des Sçavans*, and there are three textual themes and seven topical themes in the *Philosophical Transactions*. Hence there are more textual themes

per topical theme in the *Journal des Sçavans* (0.56) than in the *Philosophical Transactions* (0.43). In general, it would be expected that an increased rate of textual themes would give additional help to the reader in decoding the text, so it seems almost contradictory that the *Journal des Sçavans* text seems more confusing than its English counterpart. It must then be the case that although the *Journal des Sçavans* uses more textual themes these are not necessarily the cues that the reader needs.

If we consider what the topical themes relate to, it is found that in the *Journal des Sçavans*, four relate to the discourse, four to humans and one is clausal; in the *Philosophical Transactions*, three relate to the discourse, three to humans, and one is clausal. This is surprisingly close.

In Banks 2017a I used a random sample of articles from these two publications, of which the 1665 component comprised five issues of the *Journal des Sçavans* with a word count of 15,031, and three articles from the *Philosophical Transactions* with a word count of 20,595. If the percentages of clauses containing textual themes, topical themes relating to humans and topical themes relating to the discourse are compared with the figures obtained for this much larger sample taken from the two journals for the same year, 1665, then the results given in Table 1 are obtained.

Table 1. Comparison with general 1665 sample.

	Journal des Sçavans		Philosophical Transactions	
	This text	1665 sample	This text	1665 sample
Textual theme	56%	41%	43%	25%
Topical human	44%	31%	43%	21%
Topical discourse	44%	24%	43%	6%

It can be seen that the use of these three features is more common in these two texts than is usual in the 1665 sample. However, the difference, for all three features, is much greater in the case of the *Philosophical Transactions*. This seems to indicate that, in his translation, Oldenburg is aligning his translation on the original French.

#### 4.2 PROCESS TYPES

Table 2 shows the finite verbs found in the text with the process type attributed to each.

Table 2. Process types.

	Journal des Sçavans		Philosophical Transactions
a	existential	came	material
		was sent	material
		are contained	relational
regarde	relational	regardeth	relational
faut remarquer	mental		
pretend	verbal	pretends	verbal
auoit ... expérimenté	material	hath been found	material
sont	relational	are	relational
dit	verbal	affirms	verbal
sont	relational	are	relational
met	material	useth	material
fassent voir	material		
		do ... appear	relational
		prove	relational
ne sçaurait	mental		
concerne	relational	concerns	relational
n'a rien decouuert	mental	hath observed	mental
a ... confirmé	verbal	confirms	verbal
a publié	material		
regarde	relational	respects	relational
		affirms	verbal
a remarqué	mental	hath observed	mental
auoit veuës	mental	have been seen	mental

Figure 2 continues on next page

Figure 2 continues from the previous page

Journal des Sçavans		Philosophical Transactions	
observere	mental	<b>addeth</b>	<b>verbal</b>
ne changent point	material	is ... observing	mental
		do not change	material
<b>seroit</b>	<b>relational</b>	<b>should be found</b>	<b>mental</b>
		<b>might ...be said</b>	<b>verbal</b>
<b>tourneroît</b>	<b>material</b>	serve	relational
serueroît	relational	<b>affirms</b>	<b>verbal</b>
a remarqué	mental	hath remarked	mental
a suiuiés	material	(hath) followed	material
a veués	mental	(hath) seen	mental

I use a system of five process types. Material processes are physical in nature, and are frequently thought of as being processes of “doing” or “happening”. Mental processes are cerebral in nature, and can be thought of as processes of “thinking”, “feeling” or “perceiving”. Relational processes link two entities, or an entity with one of its characteristics, so are processes of “being” or “having”. Verbal processes are processes of communication, and existential processes state existence (Halliday, 2014; Banks, 2005, 2016).

It can be seen from Table 2 that there is much that is parallel in the two texts. Where this is not the case, the entry is printed in bold. I shall comment on these differences. It should be noted that, strictly speaking, a verb is not a process, the verb is the usual way of realizing or expressing a process. Hence, it is possible for a particular verb to realize different processes in differing contexts.

The first introductory segments, as we have already seen are different, with a single existential process in the French version, and three processes in the English, with two material and one relational process. The difference is mainly due to the extra information given in the English version.

In the first main section, the French version has a mental process, *il faut remarquer*, which has no equivalent in the English version.

The fourth section of the French has a material process in the clause *sans qu'elles fassent voir d'Iris*; the English does not have a finite equivalent, but it does have the non-finite equivalent, *without finding any Iris*. This same section has two relational processes in the English version, *as do usually appear in ordinary Glasses, and prove an impediment to Observations*, which have no equivalent in the French and are thus going beyond the original text, adding additional information. However, the French also has a mental process which has no equivalent in the English, *qu'on ne sçaurait faire*.

In the fifth section the French has a material process in *Huggens en a publié*, which is paralleled by a non-finite clause in the English version, *published by that worthy Gentleman*.

In the sixth section, where the French has a mental process, *il a remarqué*, in the English version the equivalent mental process becomes the projection of a verbal process, *Campani affirms he hath observed*. Thus the English version has an additional verbal process in comparison with the French.

This phenomenon occurs again in the seventh section where the French has the mental process *il obserue maintenant*, but the English has a verbal and mental process, *He addeth that he is now observing*. Furthermore, the English has a mental process, *if they should be found to do so*, which has no equivalent in the French, unless it is considered to be an attempted translation of *auquel cas*. The French version of this section also has the, now obsolete, phrase *il seroit constant*, which introduces an extraposition. Thompson (2004:152) calls this structure “thematized comment”. This has no direct equivalent in the English, but the segment *Jupiter might then be said*, could be considered to be a rough parallel, but in this case the English is more circumspect than the French. The French also has a material process *Iupiter tourneroît sur son axe*, where the English only has the non-finite *to turn upon his Axe*.

Finally, in the eighth section, we find the same phenomenon that was found in sections six and seven, a mental process in the French, *il a remarqué*, paralleled by a verbal and mental process in the English, *he affirms, he hath remarked*.

If the percentages of process types found in these two texts (excluding the French conclusion) are compared with those for the general 1665 sample, the results given in Table 3 are found.

Table 3. Process types (percentage).

	Journal des Sçavans				Philosophical Transactions			
	This text		1665 sample		This text		1665	
Material	7	27%	218	17%	6	21%	448	27%
Mental	8	31%	196	15%	7	24%	387	24%
Relational	7	27%	31	33%	9	31%	478	29%
Verbal	3	12%	389	30%	7	24%	267	16%
Existential	1	4%	79	6%	-	-	65	4%
	26		1313		29		1645	

It can be seen that in the case of the *Journal des Sçavans* the distribution of process types for the text under consideration, with the exception of existential, which is relatively rare in any case, is considerably different to the distribution for 1665 in general, the greatest difference being 18 percentage points for verbal process. In the case of the *Philosophical Transactions* on the other hand, the percentages of process types found is relatively close to those found for the 1665 sample, none having a difference of more than eight percentage points, which is the figure for verbal process.

If the figures for the two texts analyzed are compared, it can be seen that the percentages for the two journals are fairly close for material, mental and relational process, between four and seven percentage points, but the difference in the case of verbal process, is rather greater at 12 percentage points.

Hence, in the *Philosophical Transactions*, the percentage of verbal processes is considerably greater (12 percentage points) than in the *Journal des Sçavans*, and, in addition, it is slightly more (8 percentage points) than in the 1665 sample for the *Philosophical Transactions* as a whole. There is then a greater tendency to use verbal process in the *Philosophical Transactions* text than elsewhere in the *Philosophical Transactions*, and, even more so, than in the *Journal des Sçavans* text. It can be suggested that this is due to Oldenburg in the *Philosophical Transactions*, being at pains to attribute discourse to a specific speaker, making a point of the fact that he is reporting what others have said.. Of course, it is not the case that this information is absent in the *Journal des Sçavans*, but where in that journal it is implicit, the *Philosophical Transactions* makes it explicit.

## 5. CONCLUDING REMARKS

The *Philosophical Transactions* text studied here is a translation of the *Journal des Sçavans* text. The study has revealed three major facts about the translation. First, in general the translation follows its source text fairly closely. The structure of the *Philosophical Transactions* text is more reader-friendly than the *Journal des Sçavans* text, so it would seem that Oldenburg has to some extent tidied up the structure of the original to make it easy for the reader to follow. This is evident in the way Oldenburg has reorganized the text without the confusing subsection labelling of the French text. Secondly, most of the themes in both texts refer either to the discourse itself, or to human beings. And thirdly, the distribution of process types is similar in the two texts, and the *Philosophical Transactions* seems to be aligning with the *Journal des Sçavans*; however, the increased use of verbal processes in the *Philosophical Transactions* might indicate an attempt to attribute the discourse to a specific speaker.

In addition, over and above the specific similarities and differences between these two texts is the historical fact, that this was the very first attempt to translate something which might be considered an academic article. As a historical first, it has particular significance, since it was from this point that the academic article translation of today developed, and the academic translations of today can be considered the direct descendants of this first attempt by Henry Oldenburg in 1665. Further research is required to show how the translation of scientific articles developed from this point, and to indicate what impact this has on the way translation is carried out today.

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