WHAT ARE THE CHOICES BEHIND THE TITLES? A Systemic Functional Grammar analysis of titles from articles of Rural Sciences and Communication

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ABSTRACT: Selecting a text to read through its title is a current habit. In the scientific context, Swales and Feak (1998) explained that interesting titles attract readers and function as a way of convincing them to go forward. Previous studies about these titles usually present a quantitative approach. This research aims at identifying similarities and differences between titles of articles from Rural Sciences and Communication and providing an interpretation guided by Halliday and Matthiessen's (2014) Systemic Functional Grammar (SFG). To do so, 246 titles were retrieved from European Journal of Agronomy and International Journal of Communication. Subsequently, an analysis of 30% of titles was conducted, considering number of words, presence of verbs, punctuation - namely: simple sentences; short:long; long:short; balanced; and questions, according to Hartley (2005) - and field. The analysis suggests that titles are short, direct and informative. The length could be explained by the fact that short titles are easier to understand, or even because the journals might impose restrictions to number of words. The choices for punctuation point to simple sentences (Rural Sciences) and the format short:long for colonic titles (Communication). In addition, 43% of the titles contained at least one verb. The verbs of titles were classified mainly as material, mental, relational and verbal processes, according to SFG. Verbal choices in the titles of the corpus indicate the majority of material processes. Therefore, these titles may inform that concrete changes were developed by a procedure of analysis, which led to the outcomes of the research presented in these articles.

Keywords: Academic article titles. Genre Analysis. Systemic Functional Grammar.

1. INTRODUCTION

In the scientific context, titles are relevant features when it comes to selecting a research article to read. Indeed, scanning titles is a common daily activity within the academic community who usually search for them in online libraries, bibliographic references, proceedings, etc. So "authors know that titles are important, [...] and they know that a successful title will attract readers" (SWALES; FEAK, 1998, p. 25). To convince readers to proceed and read the text as a whole, titles need to draw their

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attention. Lewison and Hartley (2005, p. 341) state that titles should signal: "here is something you need to read" and also inform that "this is what this paper is about". This way, the reader can be both attracted and informed by paper titles.

Letchford, Moat and Preis (2015) have investigated the relation between the length of title and the number of citations received by research articles. They discovered that journals that publish articles with shorter titles are more cited than the ones with long titles. According to the authors, this could be explained by the fact that shorter titles are easier to understand, hence the articles get more citations. Another possible reason is that some journals are more popular than others and attract more attention. The researchers also highlight that it could be that some journals restrict the length of titles. For this reason, there is a broad range of reasons to interpret the findings, which can be performed by a qualitative analysis.

Previous studies about title analysis (HUDSON, 2016; LETCHFORD, MOAT AND PREIS, 2015; LEWISON AND HARTLEY, 2005; so forth) usually use quantitative approaches to analyze data. Even though they focus on the extension of titles (e.g. number of words) and some grammar aspects, a linguistic-oriented qualitative perspective is still required. We have also verified that there have not been enough studies from the field of Applied Linguistics. For example, Ravelli and Starfield (2008) examined the significance of typographic variation – font choices, salience and layout – in titles of Humanities and Social Sciences theses. Consequently, further studies in this area are still necessary, especially in terms of English for Academic Purposes (EAP) perspective, which requires more discussion towards contextual factors – they remain 'too textual', as explained by Swales (2019) in a recent paper.

In this paper, Swales (2019) brings to light that the field of Applied Linguistics has been over-explored by applied linguists in current years, and there are less studies that focus on other fields. Concerning genre analysis, the researcher also suggests that studies about the macrostructure of genres may have reached their limits, mainly because they could be "heavy on description, but light on interpretation and explanation. They show what the normal structures tend to be, but not how and why they take the shapes that they do" (Ibidem, p. 77). From this perspective, we believe it could be fruitful to investigate other fields, regarding their microstructure based on a contextualized linguistic-oriented study.

Thereby, we selected two scientific fields – Rural Sciences and Communication – to analyze and compare their use of titles in published research articles. At this moment, it is relevant to highlight that these choices were connected to both our personal academic interests and practices. While the advisor works alongside with the PHD Program in Veterinary Medicine at UFSM, the undergraduate student has a major in Journalism at the same university.

In this sense, our objective is to analyze the titles of Rural Sciences and Communication journals in order to understand the organization of the titles and the grammar choices realized by processes through notions of Systemic Functional Grammar (HALLIDAY; MATTHIESSEN, 2014). This way, we could be able to identify differences and similarities between the two scientific fields investigated.

2. RELEVANT LITERATURE

As previously mentioned, the habit of scanning titles is a regular activity within the scientific community. This group, in particular, is usually aware of how titles are important and a possible decisive factor when they choose a text to read. Swales and Feak (1998) have already conducted a study on the length of titles. They found that it is related to the scientific field and its singularities, that is, in areas such as life sciences, "titles are becoming longer and looking more and more like full sentences. In others, the preferred style is for short titles containing mostly nouns and prepositions" (Ibidem, p. 206). Colonic titles have also become common, and they perform in titles one of their main functions: separating ideas and combinations. In this same study, Swales and Feak (1998) analyzed titles, considering the number of words, the presence of verbs, punctuation and scientific field – those form the basic procedures of our analysis in this study. They have also presented three suggestions on how good titles should be designed: 1) they should indicate the topic of the study; 2) they should indicate the scope of the study; and 3) they should be clear to readers in the target field.

Likewise, Hartley (2005) analyzed sentence structure and reader comprehension in titles of journal articles, and reached out to the conclusion that some titles were misleading. The main criticism here is that even though attractive titles may seem more

appealing to the reader, they should actually be informative and straightforward. According to the researcher, "[...] in the context of information retrieval, they [witty titles] are unlikely to succeed" (Ibidem, p. 204). By tabulating the proportion of title formats (simple titles, colonic titles and titles in form of questions) in 54 journals of three different areas of psychology from 2002, the author found that colonic titles appear in almost 50% of the articles, and that titles may be getting longer, hence, they might become more informative. Regarding titles in form of questions, Hyland (2002, p. 11) suggests that "questions can help grab the reader at the outset with an arresting directness", while calling attention with a compelling language to engage the reader, who may feel invited to solve a mystery proposed by the writer.

In another similar study, Lewison and Hartley (2005) stated that titles need to be attractive and straightforward to inform the reader about the content. The authors conducted a research about the length of titles, their structure, the use of colons and the number of authors. They argue that titles in the form of questions could be constrained, in the sense of making the titles longer and, thus, harder to be understood by readers. Letchford, Moat and Preis (2015) also have considered the length of titles in articles as well. Then, they explored the correlation between this factor and the number of citations. Their findings suggested that articles with short titles are more likely to be cited. This may be due to either the short titles themselves, or the popularity of the journals, or even the restriction imposed by those in length of titles.

In his article, Hudson (2016) analyzed the characteristics of titles of academic papers submitted to UK Research Excellence Framework³ (REF) in 2014. The author's main conclusions showed that the length of titles increased closely to the number of authors' names in articles; the use of colons and question marks decreased in most disciplines though.

Our study proposes not only the analysis of the structure of the titles in Rural Sciences and Communication, but also a linguistic-oriented perspective guided by Systemic Functional Grammar (SFG) and a semantic interpretation of the titles. In SFG studies, the clause is the most important unit in grammatical analysis. Halliday and Matthiessen (2014) explain that the clause consists of three modes of meaning in the

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³ According to its website, REF is the system of evaluation that assess the quality of research in UK higher education institutions. Available at: https://www.ref.ac.uk/. Access on: Dec. 5 2020.

organization of the clause: the textual line, the interpersonal line and the experiential line. While the textual line looks at the clause as message, the interpersonal understands it as exchange. In this study, we focus on the third mode, the experiential one. It organizes the clause as a configuration of process, participants and circumstance. In other words, a clause incorporates "a process unfolding through time, [...] participants being directly involved in this process [...]; and in addition there may be circumstances of time, space, cause, manner" (Ibidem, p. 213). The system of *Transitivity* is the way to achieve this through lexicogrammatical resources. That is to say that elements in a clause are centered on a process, which is construed by a set of *process types*, typically realized by verbal group, in the transitivity system.

The primary types of processes include: *material*, *mental* and *relational* processes. *Material* clauses define events and actions, outer experiences, and processes of the outside world (e.g. 'doing' and 'happening'). They construe "a quantum of change in the flow of events as taking place through some input of energy" (HALLIDAY; MATTHIESSEN, 2014, p. 224), representing the outcome of the process. *Mental* clauses refer to inner experiences and processes of consciousness. They are processes of emotion, perception or cognition, as their outcome takes place in an individual's consciousness (e.g. 'sensing'). Therefore, they are not defined as a material act. Lastly, *relational* clauses configure the third major type of process. They are processes of identifying and classifying, that is, they construe the experience as 'being' and 'having'.

In addition to the primary types of processes, the researchers include secondary processes: behavioral, verbal and existential. The behavioral processes represent external manifestation of consciousness (e.g. the act of crying) and psychological states. Verbal processes are constructed in the consciousness and expressed in the form of language (e.g. 'saying' and 'meaning'), and existential processes are related to existence, that is, beings are recognized as existing or happening. Among them, the most frequent types expressed in the English transitivity system are material, relational and mental processes according to the authors. Figure 1 presents the types of process.

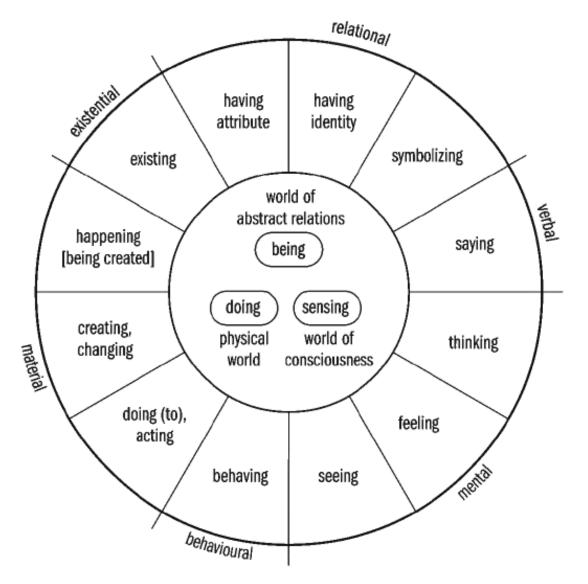


Figure 1 – The grammar experience: types of process in English

Source: Halliday and Matthiessen (2014)

Next, we describe the corpus collection and analyze the structure of the titles based on Swales (1998) and Hartley's (2005) proportion for title format. Then, we explain how Halliday and Matthiessen's (2014) SFG and the transitivity system are applied in the procedures of analysis for the interpretation of the data.

3. METHODOLOGY

The first step to select the corpus – the titles to be analyzed - was to access *Plataforma Sucupira*⁴, a website created by *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES) to achieve the necessities of its evaluative system. *Plataforma Sucupira* was used to search for interdisciplinary⁵ journals, which covered Rural Sciences as the first discipline, and Communication as the second one. Another criterion to select the journals was based on a high-quality standard of QUALIS A1⁶, with the impact factor equal to or higher than 3,800. In this sense, two online journals were selected by their International Standard Serial Number (ISSN), considering open access policy to the published issues of the journals.

European Journal of Agronomy (EJA) was selected as an interdisciplinary journal for the Rural Sciences. This journal was created in 1992 by the European Society for Agronomy (ESA) and it publishes a new volume monthly, which contains articles about experimental and theoretical studies. One of the members of its editorial board is the Brazilian agronomy researcher Carlos Alexandre Costa Crusciol from Sao Paulo State University Julio de Mesquita Filho – Botucatu Campus. The online journal International Journal of Communication (IJoC) was selected to represent the scientific field of Communication. It has been published annually by the University of South Carolina Annenberg Press since 2007. This journal is interdisciplinary, though centered on communication issues. Moreover, it is important to highlight here that renowned communication researchers such as Douglas Kellner and Henry Jenkins are part of the editorial board of IJoC.

The corpus was collected in 2019, and the criterion for collecting the corpus included the articles published in each journal that year. This criterion was due to the large amount of titles in the publications per year. The title of each academic article was

⁴ According to the website of CAPES, *Plataforma Sucupira* is a tool created to collect information, perform analysis and evaluations in order to be the baseline of the graduation system. Available at: https://www.capes.gov.br/avaliacao/plataforma-sucupira>. Access on: Sep 22nd, 2019.

⁵ We searched for interdisciplinary journals that published articles from several subareas rather than a specific one.

⁶ Further explanation about QUALIS available at: http://www.biblioteca.ics.ufpa.br/arquivos/QUALIS-rev_26_11.pdf>. Access on: Sep 22nd, 2019.

retrieved from the published issues to construe the corpus. Following the criterion of increasing time period – monthly related –, Table 3⁷ was designed to gather all the titles.

Table 3 – Data collection

Nº	Volume	Title

Source: designed by the author.

One by one, each title was pasted to this table exactly as they were written, considering their specificities, such as Latin words in italics, for example. A total of 246 titles was collected. From those, 88 titles were retrieved from 10 different volumes of EJA; and 158 from a single volume of IJoC. Instead of conducting the full analysis of the corpus as a whole (due to limitations of time and space), the sample was calculated in a virtual calculator⁸ based on a confidence level of 95%. A sample of 73 titles (30%) was randomly selected in the website 'Random Lists' (https://www.randomlists.com), considering all the titles. Then, the first step of analysis of this sample was conducted, following a template (see Table 4) adapted from Swales and Feak (1998).

Table 4 – Template of primary analysis

Number*	Number of	Any verbs	Punctuation	Field
	words			

Source: adapted from Swales and Feak (1998).

Subsequently, this sample was analyzed in relation to the average number of words, considering both fields. Then, the verbs were retrieved from the titles, and were

^{*} Number of the title in relation to its position in the original table of titles.

⁷ Table 2 is presented here as a template. The actual table, which contains all the titles, can be found in the Appendix of this study.

⁸ The virtual calculator used to calculate the sample of this study is available at:

https://www.netquest.com/pt-br/obrigado-calculadora-tamanho-amostral. Access on: Dec. 5, 2020.

classified according to the *types of processes* (see Table 5). The theory provided by the transitivity system of Systemic Functional Grammar "[...] provides the lexicogrammatical resources for construing a quantum of change in the flow of events as a figure - as a configuration of elements centered on a process" (HALLIDAY; MATTHIESSEN, 2014, p. 213). This may help with a further comprehension on how titles are organized in terms of lexicogrammatical choices, namely the notions of each type of process, their specificities and any differences among them.

Table 5 – Template of types of processes

Types of processes	Verbs	Total
Material		
Mental		
Relational		
Behavioral		
Verbal		
Existential		

Source: designed by the author.

To conclude the analysis, we looked closely into the titles again to identify if they presented any punctuation – such as question marks (?) or colons (:). The punctuations were observed in relation to the proportions of title formats, according to Hartley's (2005) definitions of a) simple sentence; b) short:long; c) long:short⁹; d) balanced; and e) question. After that, we returned once more to the types of processes and conducted a semantic analysis. In the next section, we present and discuss the main results.

⁹ Hartley (2005, p. 206) presents these formats for titles with colons (:). By short:long, "we understand a short opening statement and a longer qualification, whereas long:short has a long opening statement and a short qualification".

4. RESULTS AND DISCUSSION

This study was conducted with 30% of the titles, which were randomly selected. Table 6 show the primary results.

Table 6 – Primary results

(to be continued)

Number*	Number of words	Any verbs	Punctuation	Field
03	18	-	-	EJA
09	15	-	-	EJA
10	20	renewing	-	EJA
15	11	-	-	EJA
20	9	-	-	EJA
29	8	-	-	EJA
31	4	-	-	EJA
32	14	was	-	EJA
33	11	modeling	-	EJA
35	10	optimizing	-	EJA
37	25	learning;	colon (:)	EJA
		increases		
41	14	affects	colon (:)	EJA
44	18	-	colon (:)	EJA
52	12	-	-	EJA
54	17	drives	-	EJA
62	16	-	-	EJA
63	15	unravelling	-	EJA
66	15	-	-	EJA
79	19	-	-	EJA
81	16	explaining	colon (:)	EJA
82	12	-	-	EJA
84	17	-	colon (:)	EJA
87	23	-	-	EJA
90	21	-	colon (:)	IJoC
112	19	-	colon (:)	IJoC
115	21	came	colon (:)	IJoC
116	9	mapping	colon (:)	IJoC
121	17	be	colon (:)	IJoC
126	9	-	colon (:)	IJoC
127	19	see; is; know;	colon (:)	IJoC
130	17	-	colon (:)	IJoC
135	9	proposing	-	IJoC

(conclusion)

Number*	Number of words	Any verbs	Punctuation	Field
137	9	-	-	IJoC
139	12	-	colon (:)	IJoC
141	20	look	question mark (?)	IJoC
146	17	exploring	colon (:)	IJoC
150	6	-	-	IJoC
152	17	-	colon (:)	IJoC
153	19	(re)constructing	colon (:)	IJoC
154	16	unpublishing	colon (:)	IJoC
156	12	-	colon (:)	IJoC
159	15	-	colon (:)	IJoC
160	6	making	-	IJoC
164	14	examining	colon (:)	IJоС
174	13	using	colon (:)	IJоС
176	19	embedding; assess	colon (:)	IJoC
179	11	-	colon (:)	IJоС
192	16	mean; talk	question mark (?)	IJoC
194	9	delineating; assessing	colon (:)	IJoC
202	11	are watching	colon (:)	IJоС
203	14	is; am	colon (:)	IJоС
210	20	-	-	IJоС
212	13	dealing (with)	colon (:)	IJoC
222	20	study	colon (:)	IJoC
225	15	-	colon (:)	IJoC
229	15	examining	-	IJoC
239	14	constructing	-	IJоС
240	14	-	question mark (?)	IJoC
242	19	discussing	colon (:)	IJoC

Source: adapted from Swales and Feak's (1998) template.

Results show that a title has 14,6 words on average, considering both scientific fields. In relation to EJA, a title generally has 14,7 words, while a title from IJoC has on average 14,6 words. Based on Swales (1998), the numbers suggest a pattern of slightly short titles, which may be explained by two factors: either short titles are easier to understand, hence the articles get more citations, or the journals under discussion restrict

^{*}Number of the title in relation to its position in the original table of titles

the number of words, as investigated by Letchford, Moat and Preis (2015). In the section "Guide for Authors¹⁰" of EJA, we found that the journal requires that titles be "concise and informative". This explains the length of titles published by EJA. Yet, we could not find any instructions for title length in IJoC's website.

In relation to the structures of the titles analyzed, most of them (52,5%) typically presents the colon punctuation (:), while 42,3% are simple sentences and 5,2% contain question marks (?). Table 7 shows the results based on Hartley's (2005) table of analysis of title formats.

Table 7 – Proportion of titles in Rural Sciences and Communication

Proportion	Rural Sciences	Communication
Simple sentence	18	7
Short:long	4	22
Long:short	0	4
Balanced	1	0
Question	0	3

Source: adapted from Hartley (2005)

The data point towards a majority of titles formed by simple sentences in Rural Sciences, while the proportion 'short:long' prevails in Communication. This suggests different patterns in the structure of titles in relation to two scientific fields that differ between themselves as areas of knowledge, that is, one is oriented towards biological sciences, and the other aims at studying the relation between media and society, for example. Even though the formats 'long:short', questions and simple sentences seem to be less common in Communication, as well as the proportions 'short:long' and balanced in Rural Sciences, they are still present. As explained by Hartley (2005, p. 207), the use of colon divides the title into *specific interests* and *general concerns*, and this topic division could lead to "more effective titles for journal articles".

What could be contrasted at this moment are the facts that: a) titles of Rural Sciences were not formed by either questions or 'long:short' proportions – those were

¹⁰ European Journal of Agronomy "Guide for Authors". Available at:

https://www.elsevier.com/journals/european-journal-of-agronomy/1161-0301/guide-for-authors. Accessed on Dec 02.

found amongst titles of Communication; and b) titles of Communication did not present balanced proportions in colonic titles – one (1) balanced title was found in Rural Sciences. It is not clear if these distinctions are probably due to the rules imposed by the journals related to title submission, since they do not specify the use of colons. Another probable reason is related to the researchers' writing style.

Hyland (2002) suggest that titles composed by questions can be more attractive to the readers, thus gaining their attention. The author found that titles written in the form of questions are more common in the 'soft' disciplines, that is, in the social sciences. In this sense, our analysis provides evidences that coincide with the researcher's conclusions, since titles in the form of questions were found within Communication ones. Once more, it seems to be a matter of disciplinary differences. This may also affect the length of the titles.

Swales and Feak (1998, p. 206) explain that, for instance, in fields such as life sciences, "titles are becoming longer and looking more and more like full sentences", while researchers from other disciplines prefer a different style, and mostly opt for nonverbal short titles containing prepositions and nouns. In this study, 73 titles from two different fields of science were analyzed and most of them, that is, 57%, did not contain any verb. More specifically, less than half of EJA and IJoC titles – 43% and 42%, respectively, – are composed by clauses, which could be conflicting in relation to the authors' previous explanation, since the field of Rural Sciences is also considered as a life science.

In this sense, 31 titles contained at least one verb, consisting on at least one clause – six titles presented two or more verbs. As this study intends to analyze the data according to Systemic Functional Grammar (SFG), all 38 verbs were categorized into types of processes as shown in Table 8.

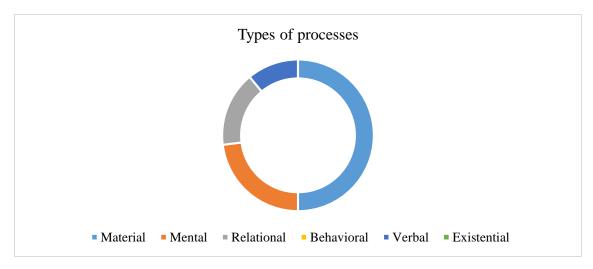
Table 8 – Types of processes

Types of processes	Verbs	EJA	IJoC	Total
Material	renewing, modeling, optimizing, increases, affects, drives, unravelling, came, mapping, exploring, (re)constructing, unpublishing, making, using,	7	12	19
Mental	embedding, delineating, dealing (with), study, constructing learning, see, know, examining, assess, mean, assessing, are watching, examining	1	8	9
Relational	was, be, is, look, is, am	1	5	6
Behavioral	-	-	-	0
Verbal	explaining, proposing, talk, discussing	1	3	4
Existential	-	-	-	0

Source: devised by the author

This analysis distributed the verbs into six categories of types of processes: *material*, *mental*, *relational*, *behavioral*, *verbal* and *existential*. Results are depicted in Graph 1.

Graph 1 – Types of processes



Source: devised by the author

The data indicate that the verbs are located mostly in the primary types of processes – *material*, *mental* and *relational*. This corroborates Halliday and Matthiessen's (2014) statement that these are the most frequent types of processes expressed in the English transitivity system. They are represented here by 89% of the verbs. Furthermore, it may be that experiences of the outside world, processes of consciousness, and identifying/classifying are more present in researches conducted by the fields of Rural Sciences and Communication.

As explained by Halliday and Matthiessen (2014), *material* processes may lead to concrete changes in some event, activity or action, and even to abstract doings and happenings, through actions performed by a participant, the actor. This may be the reason why *material* processes represent the majority of verbs here (50%), and it could be explained by the fact that experimental scientific studies are usually conducted by a methodology towards their results, that is, "an outcome that is different from the initial phase of the unfolding", meaning a change of some factor – the answer to the research problem, for example (HALLIDAY; MATTHIESSEN, 2014, p. 225).

Regarding the world of consciousness, *mental* processes have to do with sensing, e.g. feeling, thinking, perceiving, etc. They define changes of events that may happen as flowing in an individual's consciousness or as influencing it. Thus, *mental* clauses project other clauses and they can provide the notion of ideas or of content of mind. For this reason, *mental* processes differ from *material* ones, since they are not kinds of "doing". Thereby, this could explain why they do not appear as frequent as *material* processes (23%) in this study.

Subsequently, *relational* clauses represent processes of being and having, that is, their purpose is to identify and to characterize. In a way, *relational* clauses resemble 'mental' ones rather than 'material' ones. Still, what differs *relational* to *mental* process is the fact that, in the latter, there is always a participant endowed with consciousness. Halliday and Matthiessen (2014) explain that these processes model both the inner and out experience as "being". In other words, the change in this process unfolds without energy usage as static location in space, static possession, or static quality.

It is relevant to highlight that this is not 'being' in the sense of existence – as in *existential* clauses. In *relational* processes, "[...] there are two parts to the 'being': something is said to 'be' something else. In other words, a relationship of being is set up

between two separate entities" (HALLIDAY; MATTHIESSEN, 2014, p. 261). Therefore, one of the verbs that occur mostly in *relational* processes is *be*, which was elicited by the results in Chart 1. As the researchers suggest, this is actually the third major type of process, which can be also reinforced by our results (16%). Despite the low representation among *material* and *mental* clauses, *relational* processes still perform a significant share in contrast to *behavioral*, *existential* and *verbal* processes, namely the secondary ones.

With respect to the secondary processes, only *verbal* ones were realized by four verbs, that is, the remaining 11%. Amongst the secondary processes, the *verbal* ones are pointed by the researchers as a relevant resource for many kinds of discourse. *Verbal* clauses are often accompanied with quotes. This way, it is possible to quote/report other researchers in the academic discourse, for example, or even to convey meaning through titles of articles. Nonetheless, there is a low presence of *verbal* clauses and this suggests that language expression is not employed in the titles as frequent as the primary processes.

The non-appearance of *behavioral* clauses, which express typically human physiological and psychological behavior, could be explained by the fact that the titles of the articles analyzed here maybe do not reflect researches focused on human behavior issues. Alongside, the non-presence of *existential* processes to represent that something 'exists' or 'happens' implies that they are not, in general, common processes in the academic discourse. This is confirmed by Halliday and Matthiessen (2014, p. 307-308), when they point out that "[...] on the order of 3 to 4 per cent of all clauses are existential". Upon it, our analysis may infer that processes realized by verbs from the world of consciousness and the physical world seem to prevail in relation to those from the world of abstract relations.

5. CONCLUSION

In this study, we have emphasized several times the relevance of titles, especially in the academic context of paper titles. We can say that titles are like "signs" that point us the way to the text. If the title is informative, concise and attractive, it will possibly convince the reader to move forward (SWALES; FEAK, 1998). Consequently, a good title is the one that leads the reader to the text.

Our analysis reinforces these aspects: titles are short, direct and informative. The choices behind the titles in Rural Sciences and Communication are connected to their structures, as they are represented by either simple sentences or by the format short:long for colonic titles (HARTLEY, 2005), respectively. This contrasts the two scientific areas, since it points to differences in the style of the titles.

Here we have proposed a different approach from the previous studies: a linguistic-oriented analysis, aligned with Swales and Feak's (1998) genre analysis and a semantic interpretation of the microstructure of the titles guided by the transitivity system of Systemic Functional Grammar (SFG).

This way, the fields of Rural Sciences and Communication are united by SFG of Halliday and Matthiessen (2014). Verbal choices in experimental scientific studies, such as those studied here, point to the majority of *material* processes. They express that concrete changes were unfolded, that a procedure of analysis was conducted, hence, we can expect some results. On the other hand, further studies about the context of production are still required, for example, interviews with informants from the fields studied in order to gather an insider view of the results.

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APPENDIX

A) Titles collected from European Journal of Agronomy in 2019

Nº	Volume	Title
01	102	Evaluation of regional estimates of winter wheat yield by assimilating three remotely sensed reflectance datasets into the coupled WOFOST–PROSAIL model
02	102	Mineral NPK and manure fertilisation affecting the yield stability of winter wheat: Results from a long-term field experiment
03	102	Phenotypic plasticity of grain and hay quality in varieties and advanced lines from the Australian oat breeding program
04	102	Grain yield responsiveness to water supply in near-isogenic reduced-tillering wheat lines – An engineered crop trait near its upper limit
05	103	Yield components of lucerne were affected by sowing dates and inoculation treatments
06	103	Frost damage on grain number in wheat at different spike developmental stages and its modelling
07	103	Energy efficiency of winter wheat in a long-term tillage experiment under Pannonian climate conditions
08	103	Effects of input data aggregation on simulated crop yields in temperate and Mediterranean climates
09	103	Integration and potential nitrogen contributions of green manure inter-row legumes in coppiced tree cropping systems
10	103	Effects of renewal time, taproot cutting, ploughing practice, false seedbed and companion crop on docks (<i>Rumex</i> spp.) when renewing grassland
11	103	A land-based approach for the environmental assessment of Mediterranean annual and perennial energy crops
12	103	Rice exposure to cold stress in China: how has its spatial pattern changed under climate change?
13	103	Yield loss of oilseed rape (<i>Brassica napus</i> L.) under nitrogen deficiency is associated with under-regulation of plant population density
14	103	Mixing it up – wheat cultivar mixtures can increase yield and buffer the risk of flowering too early or too late
15	103	Nitrogen management in double-annual cropping system (barley-maize) under irrigated Mediterranean environments
16	103	Downscaling rice yield simulation at sub-field scale using remotely sensed LAI data
17	103	Estimating above ground biomass of winter wheat at early growth stages using digital images and deep convolutional neural network
18	103	Assessment of Piatã palisadegrass forage mass in integrated livestock production systems using a proximal canopy reflectance sensor
19	103	Soybean-maize succession in Brazil: Impacts of sowing dates on climate variability, yields and economic profitability
20	103	Grain quality in wheat—Impact of disease management
21	103	Exploiting genotype x environment x management interactions to enhance maize productivity in Ethiopia
22	103	Erect—leaf posture promotes lodging resistance in oat plants under high plant population

23	104	Impact of grapevine age on water status and productivity of <i>Vitis vinifera</i> L. cv. Riesling
24	104	Using preceding crop effects for climate smart sugar beet (<i>Beta vulgaris</i> L.) cultivation
25	104	Nonlinear growth models: An alternative to ANOVA in tomato trials evaluation
26	104	Value of seasonal forecasting for sugarcane farm irrigation planning
27	104	Delayed sowing increases grain number by enhancing spike competition capacity for assimilates in winter wheat
28	104	Calibration and evaluation of the <i>STICS</i> soil-crop model for faba bean to explain variability in yield and N ₂ fixation
29	104	Deep learning for image-based weed detection in turfgrass
30	104	Nature abhors a vacuum: Deciphering the vegetative reaction of the mango tree to pruning
31	104	A SIMPLE crop model
32	105	Wheat grown under elevated CO ₂ was more responsive to nitrogen fertilizer in Eastern India
33	105	Modeling the effects of tropospheric ozone on wheat growth and yield
34	105	Lentil enhances the productivity and stability of oilseed-cereal cropping systems across different environments
35	105	Optimizing relative seed frequency of intercropped pea and spring barley
36	105	Examining the yield potential of barley near-isogenic lines using a genotype by environment by management analysis
37	105	Learning from the soil's memory: Tailoring of fertilizer application based on past manure applications increases fertilizer use efficiency and crop productivity on Kenyan smallholder farms
38	105	An eight-year survey of wheat shows distinctive effects of cropping factors on different <i>Fusarium</i> species and associated mycotoxins
39	105	Transpiration from canopy temperature: Implications for the assessment of crop yield in almond orchards
40	105	Exploring the differences between organic and conventional breeding in early vigour traits of winter wheat
41	105	Structural memory in grapevines: Early season water availability affects late season drought stress severity
42	105	Root growth and soil carbon turnover in <i>Opuntia ficus-indica</i> as affected by soil volume availability
43	105	The impact of fungicide treatment and Integrated Pest Management on barley yields: Analysis of a long term field trials database
44	105	Bread and durum wheat: Intra- and inter-specific variation in grain yield and protein concentration of modern Italian cultivars
45	105	A simple model simulating development and growth of an olive grove
46	105	Low-cost assessment of grain yield in durum wheat using RGB images
47	105	Long-term effects of irrigation regime on fruit development pattern of the late-maturing 'Angeleno' Japanese plum
48	105	Weather forecasts to enhance an Irish grass growth model

49	105	Yield responses of arable crops to liming – An evaluation of relationships between yields and soil pH from a long-term liming experiment
50	105	Development of a nitrogen recommendation tool for corn considering static and dynamic variables
51	106	Improving productivity and increasing the efficiency of soil nutrient management on grassland farms in the UK and Ireland using precision agriculture technology
52	106	The impact of climate change on barley yield in the Mediterranean basin
53	106	New approach to determining the surface temperature without thermal band of satellites
54	106	Increasing co-limitation of water and nitrogen drives genetic yield gain in Australian wheat
55	106	Responses of <i>indica</i> rice yield and quality to extreme high and low temperatures during the reproductive period
56	106	Soil and foliar nitrogen and boron fertilization of almond trees grown under rainfed conditions
57	106	Can reproducible comparisons of cereal genotypes be generated in field experiments based on UAV imagery using RGB cameras?
58	106	Modelling biological N fixation and grass-legume dynamics with process-based biogeochemical models of varying complexity
59	107	Wheat drought-tolerance to enhance food security in Tunisia, birthplace of the Arab Spring
60	107	Does the use of cowpea in rotation with a vegetable crop improve soil quality and crop yield and quality? A field study in SE Spain
61	107	Effects of water and rice straw management practices on water savings and greenhouse gas emissions from a double-rice paddy field in the Central Plain of Thailand
62	107	Yield potential and nitrogen dynamics of no-till silage maize (<i>Zea mays</i> L.) under maritime climate conditions
63	107	Unravelling the relationship between adaptation pattern and yield formation strategies in Mediterranean durum wheat landraces
64	107	Impact of farming systems on agricultural landscapes and biodiversity: From plot to farm and landscape scales
65	108	Prognosis and diagnosis of sulfur status in maize by plant analysis
66	108	Maize yield estimation in West Africa from crop process-induced combinations of multi-domain remote sensing indices
67	109	Is it feasible to reduce tillage and N use while improving maize yield in irrigated Mediterranean agroecosystems?
68	109	Potential of indicators to unveil the hidden side of cropping system classification: Differences and similarities in cropping practices between conventional, no-till and organic systems
69	109	Benchmarking break-crops with wheat reveals higher risk may limit on farm adoption
70	109	Effective population size (N_e) of organically and conventionally grown composite cross winter wheat populations depending on generation
71	109	Modeling wheat nutritional quality with a modified CERES-wheat model
72	109	Foliar N application at anthesis alters grain protein composition and enhances baking quality in winter wheat only under a low N fertiliser regimen

73	109	Evaluating the potential of winter beet in northern Germany by a
13	109	simulation model
74	100	Development of a rice tungro epidemiological model for seasonal disease
/4	109	risk management in the Philippines
7.5	100	Adapting irrigated and rainfed wheat to climate change in semi-arid
75	109	environments: Management, breeding options and land use change
7.6	100	Soil compaction effects on grassland silage yields and soil structure under
76	109	different levels of compaction over three years
	100	Residual effect of synthetic nitrogen fertilizers and impact on Soil
77	109	Nitrifiers
70	100	Above- and belowground dry matter partitioning of four warm-season
78	109	annual crops sown on different dates in a semiarid region
		Comparison of milk thistle (Silybum marianum) and cardoon (Cynara
79	110	cardunculus) productivity for energy biomass under weedy and weed-free
	110	conditions
0.0	110	Banana leaf pruning to facilitate annual legume intercropping as an
80		intensification strategy in the East African highlands
0.1	110	On-farm diagnosis for greenhouse tomato in south Uruguay: Explaining
81		yield variability and ranking of determining factors
82	110	The critical period for yield determination in common buckwheat
82		(Fagopyrum esculentum Moench)
92	110	Double-cropping systems based on rye, maize and sorghum: Impact of
83	110	variety and harvesting time on biomass and biogas yield
0.4	110	Wheat grain number and yield: The relative importance of physiological
84	110	traits and source-sink balance in southern Australia
05	111	Combine observational data and modelling to quantify cultivar differences
85	111	of soybean
0.6	111	Super-resolution enhancement of Sentinel-2 image for retrieving LAI and
86	111	chlorophyll content of summer corn
97	111	The role of the exponential and linear phases of maize (Zea mays L.) ear
87	111	growth for determination of kernel number and kernel weight
00	111	Identifying the most promising agronomic adaptation strategies for the
88	111	tomato growing systems in Southern Italy via simulation modeling
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B) Titles collected from International Journal of Communication in 2019

Nº	Volume	Title
89	13	Gendered Visibility on Social Media: Navigating Instagram's Authenticity Bind
90	13	The Elephant and the Bird: Republican Candidates' Use of Strategy and Issue Framing in Twitter During the 2016 Republican Presidential Primaries
91	13	Online Incivility, Cyberbalkanization, and the Dynamics of Opinion Polarization During and After a Mass Protest Event
92	13	Tweeting to (Selectively) Engage: How Government Agencies Target Stakeholders on Twitter during Hurricane Harvey
93	13	Gendered Spaces, Gendered Friendship Networks? Exploring the Organizing Patterns of LGBTQ Youth
94	13	Celebrity Political Endorsement and Young Voters in Europe: A Five-Country Comparison on Celebrity Support Effectiveness in the European Elections
95	13	Picketing the Virtual Storefront: Content Moderation and Political Criticism of Businesses on Yelp

96	13	News Media Literacy: Effects of Consumption
97	13	The Scholarship of Public Diplomacy: Analysis of a Growing Field
98	13	How Does Communication Anxiety Influence Well-Being? Examining the Mediating Roles of Preference for Online Social Interaction (POSI) and Loneliness
99	13	Surveillance in Weak States: The Problem of Population Information in Afghanistan
100	13	Whose Death Matters? A Quantitative Analysis of Media Attention to Deaths of Black Americans in Police Confrontations, 2013–2016
101	13	Promoting Support for Public Health Policies Through Mediated Contact: Can Narrator Perspective and Self-Disclosure Curb In-Group Favoritism?
102	13	Sweetgrass AR: Exploring Augmented Reality as a Resource for Indigenous– Settler Relations
103	13	"None of Us Is an Island": Toward the Conception of Positive Populism Through the Analysis of Pope Francis's Twitter Communication
104	13	Call if you Can, Text if You Can't: A Dismediation of U.S. Emergency Communication Infrastructure
105	13	Peeling Back the Onion: Formative Agenda Building in Business Journalism
106	13	Measuring Gender in News Representations of Refugees and Asylum Seekers
107	13	Older Adults' Online Information Seeking and Subjective Well-Being: The Moderating Role of Internet Skills
108	13	Comparing Discursive and Performative Contributions to Legitimation of Government: A Study of Municipal Policy Making in Chengdu
109	13	The Associations of Appearance Comparisons with Peers and Chinese and Korean Media Figures with Thin-Ideal Internalization, Body Dissatisfaction, and the Drive for Thinness Among Female Korean-Chinese College Students in China
110	13	Political Elites' Use of Fake News Discourse Across Communications Platforms
111	13	Color TV: Postcolonial Concerns and "Colored" Television Audiences in South Africa
112	13	Social Capital as an Inhibitor of Online Political Incivility: An Analysis of Behavioral Patterns Among Politically Active Facebook Users
113	13	Media Effects and Marginalized Ideas: Relationships Among Media Consumption and Support for Black Lives Matter
114	13	Graphicons and Tactics in Satirical Trolling on Tumblr.com
115	13	And Then the War Came: A Content Analysis of Resilience Processes in the Narratives of Refugees from Humans of New York
116	13	From Inside the Rhizome: Mapping the Greek Alternative Mediascape
117	13	Exploring Normative Leadership: An Egocentric Network Approach to Friends' Norm-Signaling Relevance
118	13	Detecting Textual Reuse in News Stories, At Scale
119	13	Revisiting <i>Hearing the Other Side</i> : Distinct Associations of Social Network Characteristics With Political Discussion and Participation
120	13	Reaching Muslims from the Bully Pulpit: Analyzing Modern Presidential Discourse on Islam and Muslims from FDR to Trump

122 13 Self-Censorship of the Nira Radia Tapes: A Critical Juncture in the Indian Journalistic Field 123 13 Appealing to the Heart: How Social Media Communication Characteristics Affect Users' Liking Behavior During the Manchester Terrorist Attack Unpacking the Influence of Informational, Organizational, and Structural Factors on the Longitudinal Change of the NPO Follower-Followee Network on Twitter 125 13 Polls Versus Commenters: Effects of Cross-Cutting Opinion Climates on Cross-Platform Opinion Expression 126 13 Welcome to Korea Day: From Diasporic to Hallyu "Fan-Nationalism" 127 13 What You See Is What You Know: The Influence of Involvement and Eye Movement on Online Users' Knowledge Acquisition 128 13 Media Use, Cross-National Samples, and the Theory of Planned Behavior: Implications for Climate Change Advocacy Intentions 129 13 News Media Trust and News Consumption: Factors Related to Trust in New in 35 Countries 130 13 The Knowledge Gap Hypothesis Across Modality: Differential Acquisition of Knowledge From Television News, Newspapers, and News Websites 131 13 "Shouting Matches and Echo Chambers": Perceived Identity Threats and Political Self-Censorship on Social Media 132 13 Inside the Voter's Mind: The Effect of Psychometric Microtargeting on Feelings Toward and Propensity to Vote for a Candidate 133 13 Inside the Voter's Mind: The Effect of Psychometric Microtargeting on Feelings Toward and Propensity to Vote for a Candidate 134 13 Visibility Through Information Sharing: The Role of Tweet Authors and Communication Styles in Retweeting Political Information on Twitter 135 13 Proposing a Practical Media Taxonomy for Complex Media Production 136 13 Effects of Aggregate User Representation, Valence, and Argument Strength on Attitude Formation in Online Reviews 137 13 The Sequential and Conditional Nature of 21st-Century Digital Skills 138 13 Political Campaigning Games: Digital Campaigning With Computer Games European National Elections 139 13 The Political and Civic Potential of Popular Women's Magazines			
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