

# *The Construal of Experience Through Transitivity in Student Academic Writing Across Humanistic Disciplines: A Systemic Functional Analysis*

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## **Abstract:**

This paper presents the results of a study focused on the analysis of student texts in three disciplines from the humanities. The aim of the study was to determine, from a systemic functional standpoint and through a transitivity analysis of process types (HALLIDAY, 1994), how different fields of knowledge and experience are construed in student texts. In the analysis, we considered 80 texts written by undergraduate students of literature, history and geography. The texts belong to four different genres: essay, question-answer, review and report and were all written in Spanish. The methodology included a quantitative and qualitative analysis of process type realizations of each text, followed by a comparative analysis between the disciplines and between the genres considered in each one. The results showed both the similarities that unite these disciplines as part of the humanities area and the differences that reflect their specific fields of knowledge and construction of meanings.

## **Keywords:**

Transitivity. Humanities. Academic texts.

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## INTRODUCTION

This paper presents the results of a transitivity analysis – from a systemic functional standpoint – carried out on 80 student texts compiled in the CLAE corpus (*Corpus del Lenguaje Académico en Español*, or ‘Corpus of Academic Language in Spanish’), collected at the Faculty of Philosophy and Arts of the National Autonomous University of Mexico (IGNATIEVA; COLOMBI, 2014). The written productions that we examine here belong to three disciplines, literature, history, and geography, and four genres, essay, question-answer, review and report. Thus, the aim of our study was to determine how different fields of knowledge and experience are construed by undergraduate students in three different disciplines within the humanities through an analysis of process types. This study is part of a wider project focused on the study of transitivity and attitude in humanistic academic texts<sup>1</sup>, yet here we only cover the transitivity results. In turn, such work is included in the SAL (Systemics across Languages) international project in its Latin American version, which aims at involving description on as many different languages as possible. It should be pointed out that little work has been yet produced on transitivity in Spanish from the systemic functional perspective, although we can mention Lavid and Arús (2004), Oteíza (2006), García (2013), Montercé (2014), Martínez Serrano (2016), among others.

The methodology we used in this study comprised the quantification of process type realizations following Halliday (1994). Then we present a qualitative analysis, focused on identifying tendencies of the relative results across disciplines. Lastly, we carried out a comparison to observe possible variations among disciplines, contrasting the choices students make regarding their use of transitivity resources.

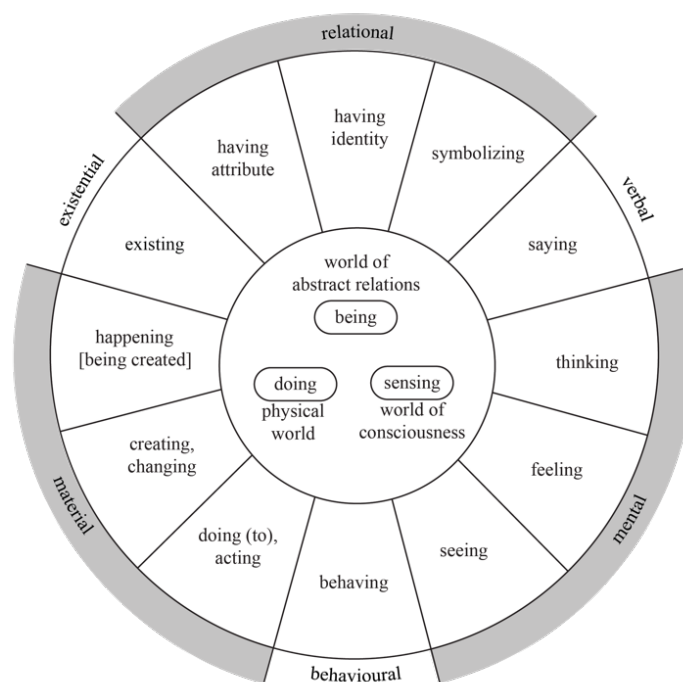
## THEORETICAL FRAMEWORK

As stated above, the theoretical framework of this paper is that of Systemic Functional Linguistics (SFL), with a particular focus on the system of transitivity. In SFL, transitivity has a meaning that goes beyond the ability of a verb to take an object, it constitutes the lexicogrammatical correlate of the experiential metafunction, and it is a product of its *realization*. It is by means of such system that human beings are able to construe experience into ordered sequences of events – or *figures* (HALLIDAY; MATTHIESSEN, 1999) –, consisting of three types of potential components: the process that is carried out, the participants of the mentioned process, and the circumstances in which the process develops. A clause then constitutes a reflection, and thus presents mechanisms to express different types of human experience as clause configurations, through distinct arrangements of its components, prototypically realized by: a verbal group for processes; a nominal group for participants; and nominal and adverbial groups, and a prepositional phrase for circumstances.

<sup>1</sup> The project “Verbal typology and attitude evaluation in the academic writing of the humanities: A systemic functional study,” carried out thanks to a grant from the National Autonomous University of Mexico (PAPIIT-401716).

Since such grammatical arrangements portray a semantic categorization of the possible experience types, the first classification differentiates the individual's outer (tangible) and inner (intangible) worlds, thus distinguishing material and mental processes, as well as the ability of construing abstract relationships via relational processes. These three types constitute the so-called main process types (HALLIDAY, 1994), and to them another three are added, considered typologically and topologically intermediate, for they combine in their semantic and lexicogrammatical characteristic elements of the two process types that are adjacent to them. Verbal processes (between mental and relational) express processes of language acts, existential processes (between material and relational) refer to that which *exists*, and behavioral processes (between material and mental) convey conducts as external manifestations of the inner world. The classical topological representation of all six process types in SFL is shown in Figure 1.

**Figure 1.** Topological representation of the process types



Source: Adapted from Halliday and Matthiessen (2014)

From the point of view of transitivity, a process not only constitutes the nucleus of the clause, it actually determines the clause type and its set of potential participant functions. Such clause configurations and their characteristic participants are described below per process type.

Firstly, material processes refer to the field of *doing* (cf. THOMPSON, 2014) and represent the most prototypical idea of an action as an event that implies a change of state in the material world (1). They comprise as participant functions: the Actor, who carries out the action or *deed* and corresponds to the logical subject of the clause; the Goal, which undergoes the process and therefore is modified by it or emerges as its product; the Beneficiary, who benefits – or not – from the process being carried out; and the Scope, to which the process extends, but does not participate in, and can also specify the process itself by adding information.

Secondly, mental processes are those by which internal states or events are expressed (2). They are related to the realm of consciousness and involve some sort of perception, cognition, emotion (HALLIDAY, 1994), or desire (HALLIDAY; MATTHIESSEN, 2004). Since this type of process models the subject's inner experience, it initially requires a conscious or 'humanized' participant: the Senser,

which *experiments* the process. The other possible participant is the Phenomenon, the entity or event that is perceived, thought, felt, wanted, etc. It can be realized by a nominal group or by a projected clause (3), and it can also function as a process-specifier.

Thirdly, relational processes express relationships between two entities (4), and due to their abstract character, they present a higher typological complexity that combines three subtypes with two modes. As subtypes there are: intensive processes, which construe ‘*x is a*’ relationships; circumstantial processes, which establish relationships with some circumstance modelled as a participant in the fashion of ‘*x is in a*’; and possessive processes that express relationships of belonging of the ‘*x has a*’ type. Furthermore, the participants in all relational subtypes are determined by their mode, which can be either attributive or identifying. In attributive processes there is a relationship of adscription in which one of the parts functions as the attribute of the other – ‘*a is an attribute of x*’ – (5), and the resulting participants are the Carrier, to which the quality or property is attributed, and the Attribute that is predicated. Whilst in identifying processes the relationship is that of equivalence between entities – ‘*a is the identity of x*’ – (4), rendering two participants, one generally with a greater degree of specificity called Identified, and another one that expresses a class or role with greater generality to which the equivalence is established, called Identifier.

1. *El agua del suelo **transporta** sustancias* (GRp5)  
[The soil water transports substances]
2. *Cardenio **ama** a Luscinda* (LPr7)  
[Cardenio loves Luscinda]
3. *no pienso tampoco **que corra el riesgo siquiera de perderla*** (LEn16)  
[I don’t think either that (he) risks even losing her]
4. *el tema principal **es** El Quijote* (LRs3)  
[the main theme is The Quixote]
5. *Este político (...) **es perfecto*** (LEn19)  
[This politician is perfect]

Fourthly, verbal processes represent acts of language (6), including symbolic exchanges of meaning (EGGINS, 2004). Thus, the set of participants of this process type comes from modelling linguistic activity itself, including: the Sayer or the one that *says* the message; the Receiver or whom the Sayer addresses; and the Verbiage, that can be either the content of what is said, or a specification of the process. Additionally, and only with some verbs, there is another potential participant, the Target when some entity is “targeted by the process of saying” (MATTHIESSEN, 1995) (7). It is also important to mention that, besides this set of participants, verbal processes can also express what is said by a projected clause (8), just as mental processes can project the content of thoughts.

Fifthly, existential processes state the existence of some entity or event. Therefore, they only have a single participant, the Existent, or that whose existence is stated (9). This category includes clauses that refer to meteorological events, composed only by the processes itself. Those cases, that in English include the pronoun *it* as a ‘dummy’ subject, in Spanish are realized just by a verb conjugated in the third person singular form – e.g. *llueve* (it rains) or *nieva* (it snows).

Finally, behavioral processes express behaviors that range from simple physiological processes, to socially conventionalized behaviors (10). The participant of this type of processes is the Behaver, or that who behaves.

6. *Comenzó Sancho a **contar** la historia del pastor Lope Ruiz* (LPr6)  
[Sancho started to tell the story of the shepherd Lope Ruiz]
7. *Don Quijote (...) **lo** (...) felicita en su decisión.* (LPr5)  
[Don Quixote congratulates him on his decision.]
8. *Marc Bloch nos dice **que no debemos fragmentar el tiempo*** (HPr3)  
[March Bloch tells us that we should not fragment time']
9. ***hay** enfrentamiento entre iguales* (LEn19)  
[there is confrontation between equals.]
10. *que estos **vivan** según el deseo paterno* (LPr3)  
[that they live according to their father's wish]

Within this general framework, the study we present in this paper focuses on nuclear or process-type transitivity (MATTHIESSEN, 1995). Hence, we analyzed the realizations of the different processes in our corpus. In the following section we detail some relevant methodological aspects regarding the study we carried out at UNAM.

## METHODOLOGY

As mentioned above, we used the *CLAE* corpus (*Corpus del Lenguaje Académico en Español*, or Corpus of Academic Language in Spanish), which was the product of one of our previous studies (IGNATIEVA; COLOMBI, 2014), being this corpus the only one in Mexico that contains student texts. These texts, collected at the Faculty of Philosophy and Arts of the National Autonomous University of Mexico, belong to three disciplines: literature (L), history (H) and geography (G), and four genres: essay (En), question-answer (Pr), review (Rs) and report (Rp). All the texts were written as part of the students' regular workload in different courses and submitted voluntarily for analysis.

**Table 1.** The corpus of our analysis

	Essay	Q-A	Review	Report	Total
Literature	22	15	10		47
History	5	10			15
Geography	10			8	18
Total	37	25	10	8	80

We can observe in Table 1 that the discipline best represented in our corpus is literature with 47 texts which embrace three genres<sup>2</sup>: essay, question-answer and review, written mostly by first-year writers. History texts were all written by first-year students and include two genres: essay (5 texts) and question-answer (10 texts). As for geography texts, they were also written by first-year students and they incorporate two genres too, although not the same: essay (10 texts) and report (8 texts). The length of the texts was measured by the number of clauses, the total number of our corpus is 11,052 clauses, the data for each discipline are given in the analysis section.

The method used in this study consists of both quantitative and qualitative analysis. We quantified the number of clauses and the number of each process type in our corpora. We tried to detect some tendencies in the distribution of process types across the disciplines and within the disciplines across the

<sup>2</sup> As our study is situated within specific academic communities in a university setting, the term "genre" is here used as an operational concept to refer to the texts as they are commonly named by the communities themselves.

genres. As for the qualitative analysis, we tried to discover the functions of process types across the disciplines.

Finally, we made use of comparative analysis as our main focus was to observe variation (if any) among disciplines, i.e. if there were differences or similarities in the choices that students make as far as Transitivity resources are concerned.

## ANALYSIS

### Literature

We start by presenting the results of the analysis of texts written by students of Spanish literature. As mentioned before, the texts from this discipline belong to three different genres, known in the community as essays, reviews and question-answers. As such, the literature sub-corpus was formed by 47 texts: 22 of those were essays, 10 were reviews and 15 were question-answers. As the analysis made was clause-based, the total number of clauses in literature texts was 5,837. Essays were the longest texts with a total number of 4,632 clauses (this represents, on average, 210.5 clauses per essay). Reviews were 72.6 clauses long on average (with a total number of 729 clauses) and question-answers, the shortest texts, had 31.9 clauses on average (479 clauses altogether).

If we consider first the frequency of the different process types in literature texts, regardless of their genre, we notice a high prevalence of material processes, as nearly 42% of the total number of processes in literature belong to this type (see Table 2). In second place, with almost half that percentage (27%) are relational processes. Mental and verbal processes come in third and fourth place, with 14% and 11% respectively. Altogether, these four process types form almost 96% of the total number of processes in literature texts. Therefore, existential and behavioral processes are very few, appearing in only 2.5% and 1.6% of the clauses, respectively. As shown in Table 2, the six process types appear mostly in the same order in all genres; there are, however, differences to be found amongst them that are worth mentioning.

**Table 2.** Process types in literature genres

	Material		Relational		Mental		Verbal		Existential		Behavioral		Total
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº
Essays	1,909	41.2	1,349	29.1	693	15	483	10.4	124	2.7	74	1.6	4,632
Reviews	416	57.3	150	20.6	54	7.4	80	11	20	2.7	6	0.83	726
Question-Answers	160	33.4	95	19.8	94	19.6	116	24.2	2	0.42	12	2.5	479
Total	2,485	42.6	1,594	27.3	841	14.4	679	11.6	146	2.5	92	1.6	5,837

The high prevalence of material processes in literature texts shows that, at least according to the genres analyzed here, the type of actions most commonly written about in this academic discipline is oriented towards concreteness, mostly by narrating the events, or happenings, that occur in the literary works that students are analyzing as in example (11) or by stating actions that the literary author has done as in example (12):



11. *Alda no sólo **usa** la palabra sino el cerebro también* (LEn18)  
[Alda used not only words but also the brain]
12. *...en esta impresión semanal, Altamirano **publicó** por entregas su afamada novela “Clemencia” (1869)* (LEn19)  
[...in this weekly imprint Altamirano published his famous novel Clemencia (1869) in serialized form]

Material processes were, then, predominant across all the literature genres analyzed. However, as shown in Figure 2 (below) this high occurrence is especially noticeable in reviews, where they are more than half of the total number of processes in the texts (57%). In contrast, the number of material processes in question-answer texts is significantly lower (33%) while essays show a frequency in between these two genres, with 41% of material processes. This difference in the frequency of material processes among literature genres may indicate that, in construing reviews, students emphasize the narration of concrete events, actions that either the author or the characters in the literary work do, while this becomes less relevant in essays and even less important in question-answer texts.

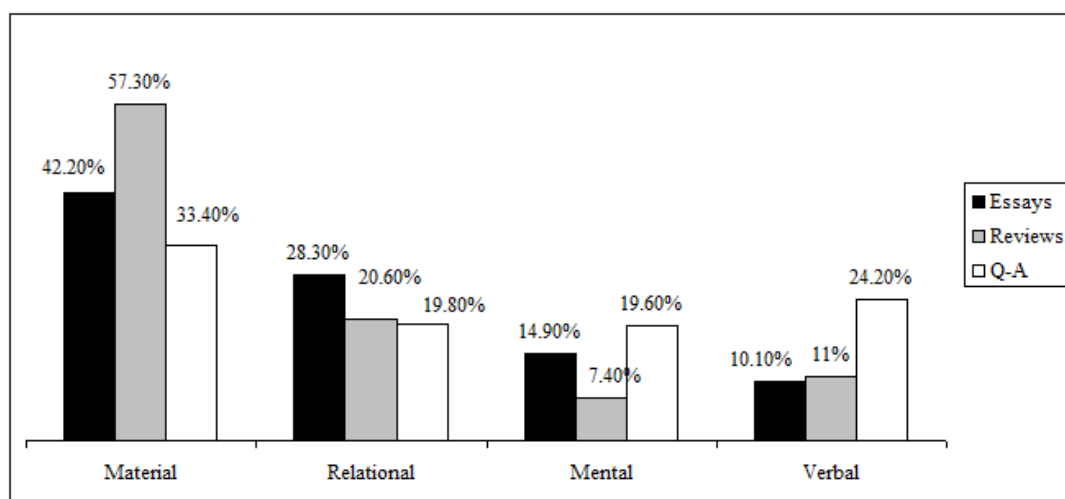
Material and relational processes are usually the most frequent process types in many different contexts and registers. This is also the case in literature student texts where material processes are followed by relational ones. Relational processes help identify and classify the different participants in clauses. In literature student texts, this is realized mostly by attributing characteristics to the literary work's characters (13), to their actions, or to the literary work itself (14)

13. *Todas las mujeres **son** bellas* (LEn1)  
[all the women are beautiful]
14. *varios de sus temas, personajes, atmósferas, y el tratamiento de los mismos **son**, todavía, actuales* (LEn18)  
[several of its topics, characters, atmospheres and their treatment are still current]

As shown on Figure 2, in literature genres relational processes appear on 27% of clauses (on average). If we compare the frequency of relational processes in the different literature genres, we can see that they are slightly more common in essays (29%). Reviews and question-answers show a very similar percentage of relational processes with 20.6 and 19.8% respectively. Establishing relationships between participants, identifying and characterizing seem to be more important activities in essays than in reviews and question-answer texts. In the latter, especially, relational processes are not as frequent. In fact, this is the only genre in which verbal processes are more frequently used than relational processes.

Figure 2 (below) shows that mental and verbal processes are the third and fourth place in terms of their frequency in literature texts with an average of 14.4% and 11.6% respectively. But, as already mentioned, verbal processes are in fact the second most frequent process type in question-answer texts where they appear in 24% of the clauses. Verbal processes are used by students in recounting what characters in the literary work say, as in (15), or for attributing sayings to either the literary author analyzed (16) or literary critics in the form of either direct or indirect citations.

**Figure 2.** Percentage of material, relational, mental, and verbal processes in literature genres



15. *Su vecino le **discute** todo lo que **dice*** (LPr11)  
[His neighbor argues about everything he says]

16. *...en una sola línea, Borges **expresa** el dolor* (LEn8)  
[...in just one line, Borges expresses the pain]

As we can see, mental and verbal processes are more commonly found in question-answer texts. As is the case in these texts, reviews show a higher frequency of verbal processes than mental ones, while in essays, the opposite occurs. In essays, mental processes are more frequent than verbal processes. Mental processes appear mostly when students discuss the characters' inner world, as in (17) or when they are expressing an opinion (18)

17. *Basilio aunque era pobre **amaba** a Quiteria* (LPr15)  
[Basilio, though poor, loved Quiteria]

18. *...yo **creo** que por tratarse de un autor español, resulta más accesible para los universitarios como nosotros* (LRs2)  
[I think that because he is a Spanish author, it is more accessible for university students like us]

The interplay of the four process types more frequently found in literature students' academic discourse can be seen in the following fragment taken from a literature essay:

19. *La poesía modernista **se basa** MATERIAL **mayormente en alabar** VERBAL **la belleza y defender** VERBAL **el arte**. Algunos en cambio **describen** VERBAL **al Modernismo como un estilo y lenguaje determinados**. Una definición que **encaja** MATERIAL **de manera singular en el tema del presente trabajo es** RELATIONAL **la que dice** VERBAL **que el Modernismo es** RELATIONAL **la expresión hispánica de una crisis universal, que anuncia** VERBAL **la disolución del siglo XIX y acompaña** MATERIAL **a la expansión del capitalismo y de la forma burguesa de vida**.*  
[LEn13] [Modernist poetry is mostly based on praising beauty and defending art. Some, however, describe Modernism as a specific style and language. A definition that fits in a singular way in the topic of this work is the one that says that Modernism is the Hispanic expression of a universal crisis, that announces the dissolution of the 19th century and accompanies the expansion of capitalism and the bourgeois way of life.]



Finally, as shown in Table 2 (above), existential and behavioral processes are not frequently used in literature. The expression of existing entities is slightly more common in reviews and essays (2.8% and 2.7% or processes respectively) while in question-answer texts they are extremely rare (just a 0.4% of all processes in this genre). On the other hand, the expression of behaviors is more frequently found in question-answer texts (2.5%) than in essays (1.6%) and is rarely found in reviews (0.8%).

Literature genres have common characteristics in construing the field. The predominance of material processes in all texts may be a reflection of the students' preference for narrating concrete actions related to either the literary work or the author they are discussing in their texts. However, the texts also show some differences amongst them in the frequency of process types. This may be linked to the purposes of each genre.

## History

In this section we want to observe how students construe experiential meanings from a disciplinary point of view, in this case we deal with history and we shall try to see the relation between discipline and genre. We are going to compare two genres (essay and question-answer) within the same discipline: history.

In the first part of our analysis we quantified the number of processes for each text in the two groups of texts. The processes were classified into six types according to Halliday (1994: material, relational, mental, verbal, existential and behavioral (See Table 3).

**Table 3.** Process types in history

	Material		Relational		Mental		Verbal		Existential		Behavioral		Total
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%	N°
Essays	230	33	183	26.3	127	18.2	143	20.5	9	1.3	5	0.7	697
Q-A	168	34.85	132	27.4	63	13.1	105	21.8	12	2.5	2	0.4	482
Total	398	33.75	315	26.7	190	16.1	248	21	21	1.8	7	0.6	1179

As shown in Table 3, the Q-A corpus is rather less extensive than the Essay corpus which is explained by genre characteristics: the Q-A texts are usually short in comparison with essays that are more extensive (482 clauses vs. 697).

On the other hand, the ideational analysis carried out with the help of the Transitivity system in this study showed many similarities between the two groups of texts. In both the essays and question-answers material processes take the lead (33% vs. 34.85%, respectively) as these processes seem to be the most prototypical among all the types, we illustrate it with examples (20-21) from our texts:

20. *Para Gaos el tiempo histórico es algo que **cambia*** (HPr1).

[For Gaos, historical time is something that changes]

21. *... el se inclina ampliamente **a buscar fuentes, analizarlas y exponerlas*** (HPr9).

[...he is greatly inclined to look for sources, analyze and expose them]

Relational processes are in the second place (26.3% for essays and 27.4% for question-answers) which was somewhat expected, as other researchers have already mentioned a wide use of relational processes in history texts (MOSS, 2010), see examples (22-23):

22. *Para Bloch la historia **es** la ciencia del hombre a través del tiempo* (HPr10).

[For Bloch history is a science of man across time]

23. ***Resulta** difícil tomar una posición al respecto* (HEn1).

[It results difficult to take a stance with respect to this]

The third place is occupied by verbal processes (20.5% for essays and 21.8% for question-answers), which was not so expected, as the third place of verbal processes is not so common in other disciplines if we take into account the fact that, as mentioned above, they are considered secondary processes in the classical version of SFL. Having registered how this phenomenon (the high frequency of verbal processes) takes place in the two genres analyzed within the same discipline (see examples 24-25), we can justify the point of view of those linguists who consider them as primary processes (IGNATIEVA, 2016).

24. *Puedo **asegurar** que la historia no solo es ese conocimiento de cultura general* (HEn8).

[I can assure that history is not just that knowledge of general culture]

25. *Por otro lado Gaos nos **habla** del tiempo histórico* (HPr4).

[On the other hand, Gaos tells us about a historical time]

As far as mental processes are concerned, they are the least frequent among the four basic types of processes. They are situated in the fourth place: 13.1% in the Q-A group vs. 18.2% in the essay group. However, we can state that their presence in history texts is substantial, see examples (26-27):

26. *Este trabajo me hizo **reflexionar** mucho sobre la importancia que tiene la historia en la sociedad* (HEn7).

[This work made me reflect a lot on the importance that history has in the society]

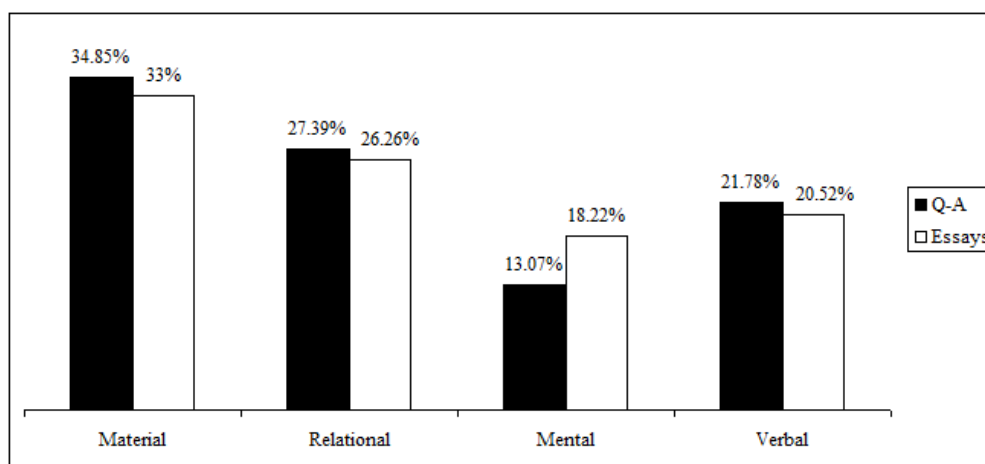
27. *... al historiador le debe **interesar** el hecho histórico* (HPr7).

[...a historian should be interested in a historical fact]

As for existential and behavioral processes, Table 1 testifies their scarce presence in our corpora. Thus, existential processes account for 1.3% and 2.5% in essays and question-answers, respectively while for behavioral processes the numbers are even less: 0.7% and 0.4, respectively. In this case their status of secondary processes is fully justified, and they are not taken into consideration for our analysis.

Another thing that drew our attention was the fact that the percent values of the types of processes are so similar, Figure 3 represents visually the similarities between the two numbers for each process type illustrating the data for each corpus.

**Figure 3.** Frequency of process types in the history texts



We can also note that only within mental processes there exists a certain difference between their percentage values in the two genres (13.1% for the Q-A group vs. 18.2% for the essays), which is evident in Figure 3.

We illustrate a wide use of verbal and mental processes with an extract from a history essay:

28. ... esta subjetividad inherente al historiador cómo lo **menciona**<sup>VERBAL</sup> Gaos en sus “Notas sobre la historiografía”; una subjetividad que también **recalca**<sup>VERBAL</sup> Hobsbawn en su texto al **hacer mención**<sup>VERBAL</sup> de que, cuando un historiador escribe no puede dejar de lado sus vivencias, y menos en un tema tan delicado como el de las matanzas alemanas que **trata**<sup>VERBAL</sup> él; y del mismo modo, nos **sentiremos**<sup>MENTAL</sup> tentados a **interpretar**<sup>MENTAL</sup> nuestros descubrimientos de la manera más favorable a nuestra causa. (HEN1).

[... this subjectivity inherent to a historian as Gaos mentions it in his “Notes about the historiography”; a subjectivity that Hobsbawn emphasizes in his text having mentioned that when a historian writes he cannot leave behind his experiences, and less so in such a delicate theme as the one of German killings which he treats; and in the same way, we shall feel tempted to interpret our discoveries in the most favorable manner for our cause]

To sum up, it can be deduced that history as discipline may have its own distribution patterns of process types. The latter may be connected also with topics discussed in these texts. Thus, the texts analyzed in this study deal with different perspectives about history as discipline and its role in the modern society. Consequently, students describe what the historians think and say about this theme, they must argue in order to take a stance and to express their own opinions based on the interpretation of various points of view. In this situation a wide use of verbal and mental processes looks logical and justified. They provide a solid base for the most important functional meanings of our corpus, which are arguing, interpreting and criticizing. The latter may represent a disciplinary characteristic of history texts.

## Geography

Now we present the results of the analysis of geography essays and reports. Regarding essays, Table 4 shows that relational processes are more frequent than material (38-34%), mental outnumber verbal (11-8%), and the appearance of existential and behavioral ones is hardly significant. The prevalence of relational clauses (29, 30) over material ones (31, 32) can also be attested in almost each of the ten essays except for two.

29. *la mayoría de los cambios **tendrán** un impacto negativo en estos factores* (GEn5)  
[most of the changes will have a negative impact on these factors]
30. *Los noruegos **son** más de 40 veces más ricos que los nigerianos* (GEn2)  
[Norwegians are more than 40 times richer than Nigerians]
31. *algunas instituciones están **trabajando** en la llamada “educación por competencias”* (GEn6)  
[some institutions are working on the so-called “competency-based education”]
32. *Cada tribu **usa** sus propias técnicas* (GEn7)  
[Each tribe uses its own techniques]

Similarly, except for two, the rest of the essays contain more mental (33, 34) than verbal processes (35, 36).

33. *la gente **piensa** siempre en su propia importancia* (GEn10)  
[People always think of their own importance]
34. *ésta es **considerada** un patrimonio nacional de cada cultura o sociedad* (GEn4)  
[This is considered a national heritage of every culture or society]
35. *La Real Academia Española **define** competencia de la siguiente manera* (GEn1)  
[The Royal Spanish Academy defines competency in the following manner]
36. *el capitalismo como argumento principal **dice** que todos somos iguales* (GEn9)  
[capitalism as the main argument states that we are all equal]

Table 4. Process types in geography

	Material		Relational		Mental		Verbal		Behavioral		Existential		Total
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº
Essays	583	33.93	699	39.14	198	10.58	146	7.63	46	1.99	141	6.72	1,813
Reports	917	41.25	961	43.23	163	7.33	91	4.09	16	0.72	75	3.37	2,223
Total	1500	37.17	1,660	41.13	361	8.94	237	5.87	62	1.54	216	5.35	4,036

The high frequency of relational processes in essays could be explained since these texts have a descriptive nature; they depict natural and social phenomena related with topics of health, medicine and illnesses. They follow the schematic structure of descriptive texts: “they usually start with general classification which locates the phenomena, followed by successive elements contributing to a description, such as types, parts and their functions, qualities, uses or habits and so on” (COPE; KALANTZIS, 1993). The considerable use of ‘being’ and ‘having’ clauses could also be partly due to a preoccupation by authors to identify phenomena and attribute them qualities, creating a potential context for the use of evaluation. Here we present a fragment with extensive use of relational processes.

37. *Globalmente el año mas caluroso fue<sup>RELATIONAL</sup> el de 1998 y los noventas fueron<sup>RELATIONAL</sup> la década mas caliente de la cual se ha tenido<sup>RELATIONAL</sup> registro; muchos países principalmente de latitudes medias y altas han tenido<sup>RELATIONAL</sup> un aumento en la cantidad de precipitación anual; en algunas regiones de Asia y África las sequías se han intensificado<sup>MATERIAL</sup> en la última década; fenómenos como el Niño han sido<sup>RELATIONAL</sup> mas frecuentes, intensos y persistentes desde la década de los setentas.* (GEn4)

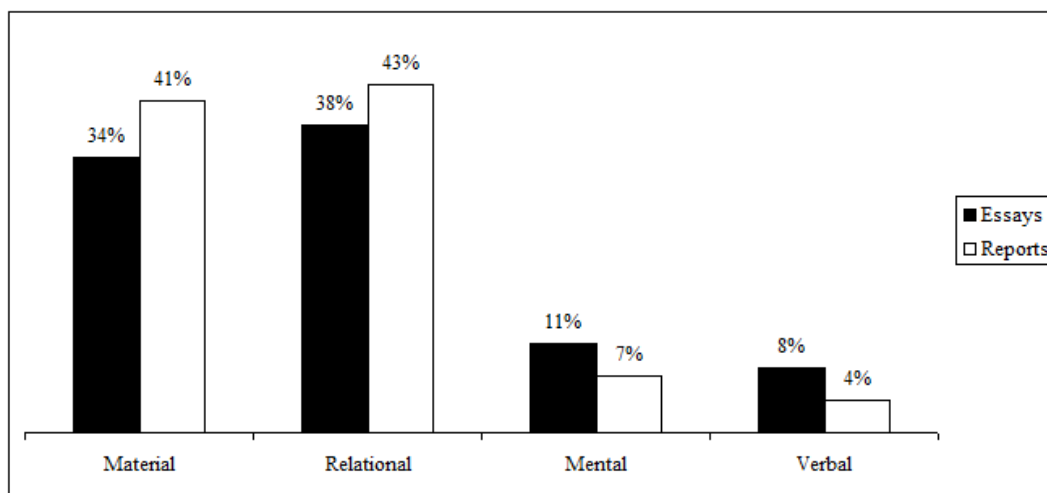
[Globally, the hottest year was 1998, and the 1990s was the hottest decade ever registered; many countries (mainly those of mid to high latitude) have had an increase in the quantity of annual precipitation; in some regions of Asia and Africa, droughts have intensified in the last decade; phenomena such as El Niño have been more frequent, intense and persistent since the decade of the 1960s.]

Turning now to the geography reports, we can observe that the frequency order is the same as in the essays, viz. relational processes are more frequent than material (43-41%), mental outnumber verbal (7-4%), and the appearance of existential and behavioral ones is hardly significant. This confirms that there is a significant relationship between the functional meanings of process types and the geography discipline. In addition, there is an experiential similarity between essays and reports within this discipline, since relational and material clauses make up more than third quarters of the texts.

For the writers of the reports, the identification of entities is fundamental during their field work, and they use relational processes to establish relationships between them. Regarding material processes, the students use them to construe their sample collection procedures and the mechanisms that have a physical effect in the tangible world. On the other hand, when they are actually used, mental processes refer mainly to the perception and comprehension of the entities the students find during their field work, whereas verbal processes are utilized as a rhetorical resource to establish a relationship with the reader.

In Figure 4, we compare the four most frequent process types in geography essays and reports. It should be noted that whereas our corpus contains essays from the three disciplines, the reports only belong to the discipline of geography. In these texts, students explain the factors, sequences and consequences surrounding the studied phenomena such as geographical terrain and its properties; they also report the results of laboratory tests carried out with the samples obtained during field work. Those characteristics are in sharp contrast with the ones that belong to the geography essays, which are more informative in that students classify and describe phenomena in terms of qualities, customs and behaviors.

**Figure 4.** Material, relational, mental and verbal processes in geography



When we see the results of the analysis of geography essays and reports (Figure 4), two aspects deserve the greatest attention: viz. the most frequent process type is not material but relational in both genres; and mental transitivity is more prominent than verbal transitivity. The high number of relational processes is associated with the high degree of abstraction of the texts, while the high number of material processes indicate that such abstraction is accompanied by physical activities. Whereas the abstraction can be observed when students explain their study topics as in (37), physical activities are visible in the fragments like the following:

38. *Se coloca<sup>MATERIAL</sup> la muestra de suelo en una de las cavidades de la placa de porcelana, apretándolo<sup>MATERIAL</sup> muy ligeramente con la espátula y eliminando<sup>MATERIAL</sup> el exceso al borde de la cavidad. Sobre el suelo se van pasando<sup>MATERIAL</sup> las perforaciones circulares de la tarjeta y se compara<sup>MENTAL</sup> directamente con los cuadros coloreados, hasta encontrar<sup>MENTAL</sup> aquel color. (GRp2)*  
 [The soil sample is placed in one of the cavities of the porcelain plate by tightening it slightly with the spatula, eliminating the excess at the edge of the cavity. The drilling of the card is performed on the soil, and compared directly with the colored frames, until the color is found.]

## DISCUSSION

In this section we will discuss the analysis by comparing the transitivity findings across disciplines. We will do this in two parts. In the first, we will compare the experiential meanings of the texts that belong to the same genre but to different disciplines, i.e. essays (literature, history and geography) and Q-As (literature and history). In the second part, we will merge the results of all the texts that belong to the same discipline in order to obtain a general outlook of the experiential meanings that are construed in each of the three disciplines.

We start the discussion by comparing the results of the essays across disciplines. Although the process type ranking is quite similar among disciplines, there is one aspect that deserves attention, which is the greatest semiotic labor of the primary process types (according to Matthiessen (1995), material, relational, mental and verbal) compared with the secondary types (existential and behavioral). There are even some texts – in all disciplines and genres – that present no behavioral processes at all. However, as has been reported for different languages and different contexts (BANKS, 2016), this is more the rule than the exception.

What is peculiar in our results is the preponderance of relational over material transitivity found only in geography essays. Geography seems to be a discipline in which knowledge relies much deeply on the construal of relationships between particular entities. Another peculiarity is the preponderance of verbal over mental transitivity found only in history essays, which evidences one distinctive feature, viz. verbal processes are key in the integration of different voices – including the students' and other authors' – into a coherent discourse that presents historical events and their influence in the norms of present day society.

To finish the discussion regarding the results of the essays across disciplines, since the occurrence of behavioral and existential processes is barely significant, it can be considered that the experience related to behavior and existence plays a minor role in the writing of essays across disciplines. Regarding behavioral processes, because of their low degree of representativeness, they have actually been understudied (cf. BANKS, 2016); and concerning existential processes, their low occurrence might have to do with the fact that the existence of the entities studied in these texts is already presupposed.

Turning now to our second genre, question-answer (Q-A), this is a particular text type in that they do not actually follow an established structure (as in essays or reviews). Rather, students have the

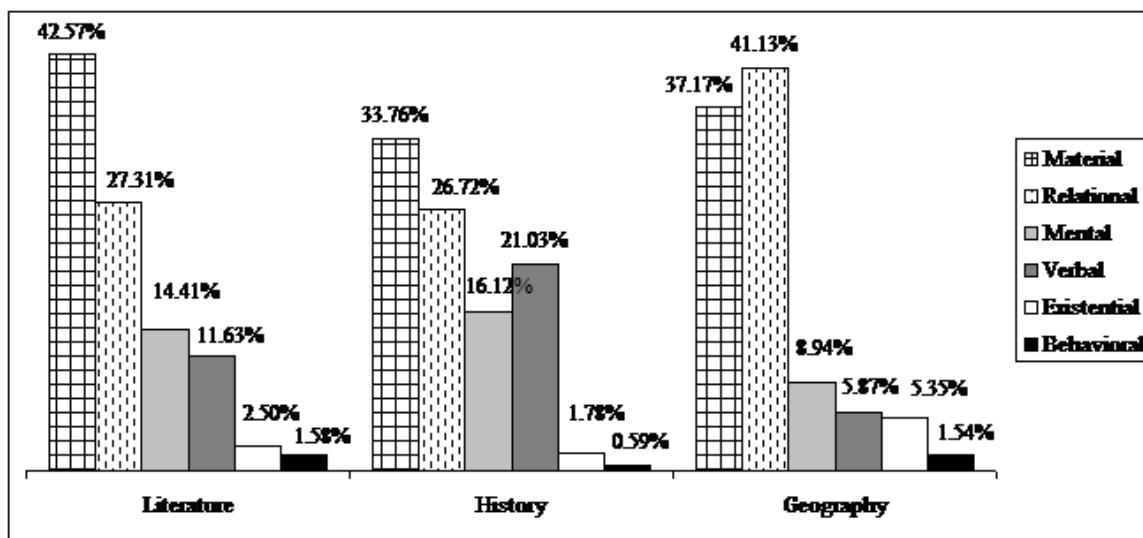


freedom to create their text following their own intuitions when they answer the questions asked by their teachers. Therefore, the rhetorical characteristics of these texts depend on the kind of questions the students are required to answer, and they are normally very short texts. In our corpus, there are Q-As that belong to history and literature.

In both disciplines, the most frequent process type is material; however, the second most frequent type varies: relational in history but verbal in literature. This variation might be due to the fact that the key functional meanings of the literature texts are mostly based on the expression of opinions, viewpoints and attitudes, whereas history texts rely more on the description of states of affairs (MOSS; CHAMORRO, 2015). Despite this variation, the frequency of verbal processes is rather high in both disciplines, imbuing Q-As with a rather colloquial style (IGNATIEVA, 2008), especially in literature texts, where students often quote the words of fiction characters. In addition, in the literature texts mental processes are almost as frequent as relational ones, whereas in history they are less frequent. In a similar fashion to verbal processes, students utilize mental processes to express characters' opinions, thoughts and emotions.

We will now discuss the results of all the texts that belong to the same discipline. In Figure 5 we have merged all the transitivity results of the texts that belong to literature, history or geography. Based on Matthiessen (2018), we take for granted that in a reference corpus of texts belonging to a wide range of registers, the expectation is to find the following frequency of process types: Material > Relational > Mental > Verbal > Existential > Behavioral. Thus, in our corpus we see that the only discipline that essentially follows that order is literature; in history there are more verbal than mental clauses, whereas in geography there are more relational than material clauses. Additionally, in all the disciplines there are more existential than behavioral processes.

Figure 5. Transitivity results across disciplines



The presence of a large number of verbal processes in history texts is an indication of the significant semiotic labor they fulfil as a linguistic resource for the students in this discipline (IGNATIEVA, 2016). Besides, because their frequency is similar to that of mental ones (a primary type), but distant to that of existential ones (secondary type), their consideration as a fourth primary type (along material, relational and mental) seems legitimate. In fact, Matthiessen's (1995) visual representation of transitivity in square form (as opposed to Halliday's round form) considers existential and behavioral as the only two secondary types.

On the other hand, in the geography subcorpus, there are two important aspects. First, relational processes outnumber material ones. As we mentioned previously, this was the case in the two genres belonging to this discipline (essays and reports), and thus we believe this is a characteristic that reflects a disciplinary orientation in which the knowledge relies largely on the identification and attribution of abstract elements. Similarly, Filice (2010), in her theme-rheme analysis of geography essays written by both students and experts, found out that most of the thematic elements were abstract entities. Although relational processes outnumber material ones in our corpus, the second important aspect of geography texts shown by Figure 5 is that those two categories together appear in almost 80% of the clauses. Thus, compared to literature and history texts, in geography mental and verbal experience is not quite significant.

We must also mention one important implication deriving from the results in Figure 5, viz. there are three pairs of transitivity categories whose members appear with similar frequencies (especially in literature and history): material-relational, mental-verbal, and existential-behavioral. It is clear that material-relational experience is essential in the construal of general knowledge, but when it comes to specific disciplines, the semiotic labor of mental-verbal processes can vary. In our corpus, history relies on this pair in first place, literature in second, and geography in third. In light of this it will be important to investigate whether the variation observed in this pair of process types has to do with the level of subjectivity with which the texts are written (see IGNATIEVA; RODRÍGUEZ-VERGARA; ZAMUDIO, 2021).

Regarding history texts, our results coincide with the ones presented by Herrero (2016, 2017). She also analyzed transitivity in history essays written by students. In addition, she compared the use of process types in undergraduate first-year students, seniors, and experts. Whereas mental processes outnumbered verbal ones in first-year students, the opposite was the case in seniors and experts. Thus, this is one more indication of the importance of verbal transitivity in history.

## CONCLUSION

The purpose of the study presented here was to determine, through a Transitivity analysis of process types, how different fields of knowledge and experience are construed by undergraduate students in three different disciplines within the humanities. The analysis showed the similarities among the disciplines, but also the differences that separate each specific field of knowledge. Here, material and relational processes are the most common process types in these disciplines and in the genres considered within the disciplines. These two process types represent more than 60% of the total number of processes, regardless of the discipline. Mental and verbal processes follow in terms of frequency in all three disciplines, with verbal processes being especially relevant in both genres belonging to history and one genre from literature (reviews). This shows the important role of verbal processes in the development of experiences in student academic discourse, at least in the humanities. Lastly, existential processes are more frequent than behavioral ones, but they are still rarely used.

This analysis has allowed us to see the way literature, history, and geography undergraduate students in our study construe their field in their texts and the functional meanings that seem to prevail in each discipline<sup>3</sup>. Literature favors the narration of concrete actions as shown in the frequency of material processes. History, on the other hand, seems to prefer the argumentation and interpretation of events, especially in terms of what other authors have said (reflected in the use of a higher number of verbal processes).

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<sup>3</sup> Even though the length of the texts and the authors vary in each discipline, we recognize – following Matthiessen (1993) – that description as a highly demanding labor needs to be carried out based on principled selections that are used as a way into a comprehensive description, taking into account the particular objectives and the level of analytical delicacy of our study.

In geography texts, meanwhile, the description of natural and social phenomena may be the prevalent meanings (as shown by the higher frequency of relational processes). By considering three disciplines, we have seen some of the characteristics that both unite them as part of the humanities area and separate them in terms of their specific knowledge construction. By considering four different genres in our study – essays, reviews, reports and question-answer – we could observe the elements that unite the disciplines regardless of genre considered in our corpus, but we have also detected the aspects that separate them and possibly characterize each genre but indeed such genre characterization demands further research. However, a more extensive Transitivity analysis, which takes into account not only more texts and genres but also other participants and the relationships amongst them, is needed to get a bigger and more precise depiction of the experiences construed in these fields.

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