Syntactic and Semantic Analysis of Research Articles
Introduction Sections Published in Egyptian and International Journals in Linguistics

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Abstract

The present paper seeks to analyze the process types of transitivity, nominalization types, tense usage, and voice choice of Research Article Introductions (RAIs) written by Egyptian and international researchers in linguistics. The corpus of the study consists of 50 RAIs selected from Egyptian and international journals from 2014 to 2021. The study is based on Halliday's (1967) Systemic Functional Grammar (SFG) for identifying processes of transitivity and nominalization types. It also depends on both qualitative and quantitative techniques to analyze the selected data. It has been found that the two groups were similar in terms of transitivity process types. That is, material process which indicate actions, had the highest percentage compared to the other processes. Both samples also used the first kind of nominalization (verb to noun) more frequently than the second one (adjective to noun). As for tense and voice, both Egyptian and international Research Articles (RAs) were found to be similar in using present simple tense and active voice the most. The current paper contributes to a better understanding of the transitivity system, nominalization types, tense usage and voice choice. It is expected to provide Egyptian and apprentice scholars with various

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conventions of writing RAIs which help them write good quality RAIs meeting international standards.

**Keywords:** research article, Introduction section, transitivity analysis, nominalization analysis, tense and voice choice.

1. **Introduction**

RAs, compared to other kinds of genres, are the most common academic genre which have been extensively researched (Charles & Pecorari, 2016). Also, they have their own rules of writing and producing effective RAs requires a complete knowledge and comprehension of these rules (Swales & Feak, 2004). Therefore, examining the linguistic features of the different sections of RAs is of crucial importance.

Moreover, the introduction section is one of the sections through which the reader can have a good first impression about the text. When this section is written clearly and attractively, the reader is encouraged to continue reading the upcoming sections of the text (Swales, 1990; Samraj, 2002; Gledhill, 2000). Due to the significance and complex nature of RAIs, this study is concerned with investigating some linguistic features of the introduction section of Egyptian and international RAs in linguistics.

In addition, most studies conducted on introduction section (e.g. Swales, 1990; Samraj, 2002; Loi, 2010; Sheldon, 2011; Lu, Casal, & Liu, 2020; Lu, Yoon, & Kisselev, 2021) were interested in investigating the rhetorical structure of the introduction section without analyzing in-depth the linguistic features which provide valuable and
sufficient information that have great benefits to novice scholars. Therefore, this study attempts to fill in this gap.

1.1 Objectives of the Study

This study aims at comparatively investigating selected linguistic features (process types of transitivity, nominalization, tense usage and voice choice) of RAIs written by native English speakers (NESs) and non-native English speakers (NNESs) in the field of linguistics.

1.2 Significance of the Study

Examining the linguistic features of both Egyptian and international writers helps raise students' and apprentice researchers' awareness of those features. In addition, the study is hoped to help teachers and academics master the conventions of writing the introduction section.

1.3 Research Questions

The current paper seeks to answer the following research questions:

1- What are the similarities and differences in the transitivity process types employed in Linguistics Egyptian RAIs and Linguistics international RAIs?

2- What are the similarities and differences in the use of nominalization in the introduction sections of Egyptian and international RAs in linguistics?

3- How do tense usage and voice choice differ in the introduction sections of Egyptian and international RAs in linguistics?

2. Theoretical Framework

2.1 Transitivity System

Based on Halliday's (1967) Systemic Functional Grammar (SFG), transitivity system, which represents the ideational part of language, is related to the semantic aspect of the utterance. This system explains the
meaning of the sentence through analyzing the processes (verbs) expressed in it and thus it helps understand how individuals express their worldview through their utterances. The semantic processes expressed in sentences are material, mental, relational, verbal, behavioral and existential (Halliday & Matthiessen, 2004).

2.1.1 Material processes

Material processes, according to Thompson (2004), indicate physical actions. They consist of two participants: an actor (the doer of the process) and a goal (the object). The actor is the main participant and it is subdivided into animate and inanimate actor. When the process is acted by an animate actor, it is called an action process. In contrast, when the process is acted by an inanimate actor, it is categorized as event process.

2.1.2 Mental Processes

They include feeling or thinking. More specifically, they are realized by verbs like see, hear, think, believe, hypothesize, understand, like, and hate. This kind of processes has two participants: a sensor and a phenomenon. (Halliday & Matthiessen, 2004).

2.1.3 Relational Processes

They are the processes of being and subdivided into attributive and identifying relational processes. The attributive relational process has two participants: the carrier and the attribute while the participants of identifying relational process are the value and the token or identifier and identified (Halliday & Martin, 2005).

2.1.4 Verbal Processes

They indicate saying and are composed of two major participants: the sayer and the receiver. There also may be another participant
called the verbiage which refers to the content which is addressed to the addressee (Thompson, 2004).

2.1.5 Behavioral Processes

They are related to "any human behaviors based on a combination of physiological and psychological acts" (Halliday & Matthiessen, 2004, p. 248). It has only one participant: the behaver.

2.1.6 Existential processes

They are the processes of happening and they are realized by the phrase 'there is'. These processes are composed of only one participant which is called the existent (Thompson, 2004). The following table summarizes the six process types of transitivity and their participants.

Table 1
Summary of Process types, their meanings and their participants

<table>
<thead>
<tr>
<th>Process Type</th>
<th>Category Meaning</th>
<th>Participants, Directly Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>material: action event</td>
<td>“doing” “doing” “happening”</td>
<td>Actor, Goal</td>
</tr>
<tr>
<td>Behavioral</td>
<td>“behaving”</td>
<td>Behaver</td>
</tr>
<tr>
<td>mental: perception cognition desideration emotion</td>
<td>“sensing” “seeing” “thinking” “wanting” “feeling”</td>
<td>Sensor, Phenomenon</td>
</tr>
<tr>
<td>Verbal</td>
<td>“saying”</td>
<td>Sayer, Target</td>
</tr>
<tr>
<td>relational: attribution identification</td>
<td>“being” “attributing” “identifying”</td>
<td>Carrier, Attribute Identified, Identifier; Token, Value</td>
</tr>
<tr>
<td>Existential</td>
<td>“existing”</td>
<td>Existent</td>
</tr>
</tbody>
</table>

(Halliday, 2004, p.260)
2.2 Nominalization

Nominalization, according to some linguists, refers to the process of transforming a verb (process), an adjective (quality), a conjunction, or an adverb into a noun (thing), and also a clause into a nominal group (Eggins, 2004; Martin, 1991). This definition implies that nominalization does not only include change in the part of speech, but also leads to semantic change. Halliday's (1967) SFL was used to analyze nominalization which is a form of grammatical metaphor (GM). GM which is the theoretical foundation of nominalization can be defined as "a substitution of one grammatical class, or one grammatical structure by another" (Halliday & Martin, 2005, p. 87). Grammatical metaphor is used to foreground "meanings in static nominal groups and background personal and subjective voice" (Liardét, 2013, p. 163).

Employing nominalization in academic writing is of crucial importance in academic writing for many reasons (Biber & Gray 2010; Banks, 2008). First, nominalization is employed for summarizing much information using few words. For instance, the clause "The scholars abroad have greatly appreciated and accepted the book" could be, after using nominalization, "I have found a lot of appreciation and greater acceptance abroad". The latter is the metaphorical counterpart of the former (Halliday, 2004, p.36). As a result, nominalization is an economical means of presenting sufficient information and thus it is a form of condensation of information (Billig, 2008).

Second, through increasing the information density, nominalization helps connect ideas and create the cohesion of texts (Martin & Rose, 2008). Third, using nominalization enables the writer to turn processes into abstract objects and to avoid repetition of verbs.
(Baratta, 2010). It also removes the need to use personal pronouns and this feature of nominalization makes the text objective and formal (Hyland, 2006). Fourth, Martin (1991) maintains that "in science, nominalization is strongly associated with definitions; its function is to accumulate meanings so that a technical term can be defined" (p.333).

With respect to the types of nominalization, there are several types of nominalization indicated by various researchers (e.g., Rodby & Winterowd, 2005) while the current study examines two common types of nominalization that produce ideational metaphor. The investigated types of nominalization in this paper are verbal nominalization (e.g., discuss-discussion; move-movement) and adjectival nominalization (e.g., dense-density). The verbal nominalization, according to Halliday (2004), is divided into three types: 1) nouns and verbs spelled alike (e.g., the verb change and the noun change), 2) verbs change their stems to become nouns (e.g., the verb analyze becomes analysis), 3) verbs have suffixes added to become nouns (e.g., discuss becomes discussion; move becomes movement). The two types are summarized in Figure 1.

Figure 1. Forms of nominalization investigated (Thomas & To, 2016, p. 13).

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2.3 Tense Usage

Tense refers to the time of performing an action and it is related to the verb of the sentence (Malcolm, 1987). There are four aspects of tenses in English: simple, perfect, progressive, and perfect progressive. Each aspect is marked by a syntactic marker which distinguishes it from the other aspects (Quirk et al., 1985) and based on these aspects, there are twelve tenses in English. They are the present simple, the past simple, the present perfect, the past perfect, the present progressive, the past progressive, the present perfect progressive, the past perfect progressive, future simple, future perfect, future progressive, and future perfect progressive (Celce-Murcia & Larsen-Freeman, 1999).

In research article writing, different tenses are used and their usage vary according to the function they perform in each section. However, according to Tarone et al. (1981), Malcolm (1987) and Reeves (2009), the present simple, the past simple, and the present perfect are used more frequently in academic writing than the other grammatical tenses like future and progressive.

The present simple tense is used in the introduction sections of RAs to provide the reader with some background information about the investigated topic or to indicate facts (Swales, 1990). Also, it can be used in other sections to comment on the findings reached and express interpretations of these finding (Dastjerdi et al, 2017). With respect to the past simple tense, it is used in RAs to indicate findings and methods of previous studies, or describe previous work on which the current work is based. In other sections, it may be used to describe the findings of the study under investigation or the procedures of data...
analysis (Hawes& Thomas, 1997). As for the present perfect tense, it combines both present and past as it is used for describing complete or incomplete actions began in the past and their effect is relevant to the present moment. However, the time of starting these actions in the past is indefinite (Reeves, 2009).

2.4 Voice Choice

There are two types of voice in English: active and passive. The passive voice was preferable in scientific and academic writing for two reasons, First, it does not only allow writers to move the agent/actor to the end of the sentence, but also to omit it altogether. Therefore, it describes procedures objectively. Second, for scientific and academic writers, the concept being defined is more important than the actor and when describing a mechanical process, the details of this process are much more important than the actor (Seone,2013). However, some linguists such as Hinkel, (2004b), Banks (2017) and Leong, Toh, & Chin (2018) have maintained that the active voice is recommended and researchers in academic writing have a tendency in recent years to use the active more than the passive. This recommendation is because the active sentence is shorter and more direct than the passive sentence. Also, the active voice enables the writer to express his thoughts clearly unlike the passive voice which sometimes hides the true meaning.

3.Literature Review

Some studies (e.g., Jomaa& Bidin, 2019; Zheng, 2021) investigated the process types of transitivity of the different sections of research articles or the various chapters of MA or PhD theses across different fields. Other studies (e.g., Mehrabi, et al, 2018; Kaidan, Jalilifar, &
Don, 2018) investigated the different kinds of nominalization and the use of tenses and voice (e.g., Hinkel, 2004b; Abarghooeinezhad & Simin, 2015; Nurhayati & Jakarta, 2017). The following section reviews some of these studies.

Jomaa & Bidin (2019) adopted Halliday's (1967) Systemic Functional Linguistics (SFL) to identify processes of transitivity in the literature review chapters of 20 PhD theses in Applied Linguistics (AL) and Information Technology by Arab postgraduates. They noticed that information technology was similar to applied linguistics in the high percentage of the material processes which were followed by relational, verbal, and mental processes. They have found also that behavioral and existential processes had the smallest number and percentage. Similar to Jomaa and Bidin (2019), Zheng (2021) investigated the transitivity structure of ten AL RAs published in top journals of the discipline to identify the variations of process types across sections. He found that material and relational processes were dominant and these two processes were followed by existential processes.

Mehrabi, et al (2018) examined the distribution of nominalization in the structure of RAs across hard and soft sciences. They have found that writers in hard science have a tendency to use nominalization more frequently than their counterparts in soft sciences. However, there was no significant difference in the lexical density of the introduction sections of the two datasets. In contrast, Kaidan, Jalilifar, & Don (2018) who identified occurrences of nominalization in different types of RAs in physics and AL found that the writers in AL used nominalization more frequently than their counterparts in physics. Also, their analysis showed that the deployment of the second type of nominalization (verb
to noun) is different from the other types of nominalization in each field. They also noticed the frequent use of nominalization in experimental RAs in the field of AL.

Hinkel (2004b) examined the usage of tenses, aspects (perfect/progressive) and the passive voice in academic texts written by NESs and NNESs. He found that the present simple tense was the most used tense in many types of academic genres, followed by the past simple tense. In addition, the findings of his study revealed that use of the passive voice was prevalent in academic writing. Also, he observed that NNESs employed the past simple tense more frequently than the NESs and the advanced non-native speakers had difficulty in employing tenses, aspects, and the passive voice even after years of second language use.

Aligned with the findings of Hinkel (2004b) in terms of the use of tenses, Abarghooeinezhad and Simin (2015) analyzed 50 RA abstracts among English speakers and Iranian speakers in electronic engineering to investigate the use of tense (present/past) and voice (active/passive) in addition to rhetorical structure of their research abstracts. The results of their study indicated the dominance of present tense verbs. Contradicting Hinkel's (2004b) results in light of the use of tense and voice, they found that the active and passive voices had the same frequency of occurrence.

Nurhayati and Jakarta (2017) analyzed RA abstracts of Asian journal to examine the use of tense and voice. They found, in accordance with Hinkel (2004b), that the simple present was the dominant tense, followed by the present perfect and the past simple. In contrast with
Hinkel (2004b), they found that the active voice was used more frequently than the passive one.

The above-mentioned studies analyzed only one linguistic feature (e.g. transitivity, nominalization, tense usage, voice choice) while the present study seeks to analyze all these linguistic features to contribute to a deeper understanding of the articles under investigation.

4. Methodology

4.1 Research Design

The present paper employs both qualitative and quantitative methods for analyzing the selected introductions. Quantitative method is deployed to count the frequencies of the process types of transitivity, types of nominalization, different tenses and voice across both corpora. However, qualitative technique is employed to provide interpretations to the quantitative findings.

4.2 Data Collection

The corpus of the study consists of 50 linguistics RAIs divided into two groups. The first group consists of 25 RAIs which were taken from prestigious Egyptian journals according to the Supreme Council of Universities. The other 25 RAIs were taken from international journals registered in Journal Citation Reports.

4.3 Procedures

The Egyptian introduction sections were coded as Egy 1-Egy 25 and the international introductions as Int 1- Int 25. The analysis was conducted in two stages. First, the selected data was analyzed qualitatively in terms of transitivity, nominalization, tense and voice. Examples of process types of transitivity, types of nominalization, types of tenses and voice from both corpora were presented. The
second stage includes analyzing the data quantitatively. The instances of each linguistic feature were counted and their percentages were compared across both corpora to determine the most used types.

5. Data Analysis

5.1 A Qualitative Transitivity Analysis of Linguistics Egyptian RAI s and Linguistics International RAI s

In this section, different examples from both samples are given. LIRAI stands for linguistics international research article introduction and LERAI refers to linguistics Egyptian research article introduction.

5.1.1 Material Process

The next examples from both Egyptian and international samples illustrate using this kind of process:

1. We (actor) conducted (material process) a meta-analysis (goal) (LIRAI#2, sentence no.#9).

2. The EMI policy (actor) creates (material process) an unusual immersion environment (goal) (LIRAI#4, sentence no.#9).

3. The share of humorous oriented utterances (actor) builds (material process) a common ground (goal) among the users of Facebook (LERAI#15, sentence no.#17).

In the above examples, the verbs conducted, creates, and builds represent actions. The first example refers to an action process as the actor is animate while the second and third ones indicate event processes.
5.1.2 Mental Process

In the following extracts taken from both Egyptian and international samples, the verbs *feel*, *aim* and *wish* indicate perception, cognition, and reaction.

4. English teachers in Chinese universities (Sensor), … *feel* (mental process) the pressure of finding ways (phenomenon) (LIRAI#5, sentence no.#13).

5. Overall, we (sensor) *aim* (mental process) to provide a blueprint of good practice (phenomenon) in framing analysis … (LIRAI#3, sentence no.#23).

6. Often however, one (Sensor) may not *wish* (mental pr.) to communicate our attitudes (phenomenon), … (LERAI#3, sentence no.#15).

5.1.3 Relational Process

The next quotations include both identifying and attributive relational processes to provide more explanations to the concepts or phenomena related to the investigated topic.

7. Our results (identifier) *show* (identifying relational pr.) notable associations (identified) between the move structure and the visuals (LIRAI#7, sentence no.#23).
8. This ideology (carrier) is (attributive relational pr.) identifiable (attribute) in educational... discourses (LIRAI#10, sentence no.#2).

9. The sample data (identifier) includes (identifying relational pr.) two images (identified) which show (identifying relational pr.) a presidential candidate (identified) ... (LERAI#4, sentence no.#9).

5.1.4 Verbal Process

The upcoming extracts illustrate using verbal processes in both sub-corpora where the verbs describe, discussed, and argues indicate saying:

10. Next, we (sayer) describe (verbal pr.) the statistical procedures (verbiage) for our multilevel meta-analysis (LIRAI#2, sentence no.#12).

11. Tahir Gurcaglar (Sayer) (2011) discussed (verbal pr.) the idea of a translator's preface (verbiage) (LERAI#13, sentence no.#11).

12. Similarly, Kellner (2017) (sayer) argues (verbal pr.) that investigating the language of humor in online and digital discourses ... (verbiage) (LERAI#2, sentence no.#15).

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5.1.5 Existential Process

The examples below illustrate the function and the participant of this kind of process:

13. *There is* (existential process) considerable confusion (existent) as to whether Translanguaging could be … (LIRAI#1, sentence no.#3).

14. *There is* (existential process) a need (existent) to conduct a discourse analysis of RAs submitted for publication (LERAI#12, sentence no.#9).

The above-mentioned examples include verbs of existing indicating an occurrence. Also, these examples involve only one participant which is the existent.

5.1.6 Behavioral Processes

In the international sample of linguistics, there is only one example of this kind of processes in which the verb observed indicates human behavior:

15. Sereno et al. (2016) … (behaver) observed (behavioral pr.) that while intonation is closely linked to intelligibility (LIRAI#24, sentence no.#25).

However, there are three examples of this process in the Egyptian sample:
16. The stand-up comedian (behaerver) talks (behavioral pr.) to his audience directly … (LERAI#6, sentence no.#4).

17. It has been proven that “71.6 million viewers (behaerver) watched (behavioral pr.) the final debate… (LERAI#10, sentence no.#8).

18. Lakoff and Johnson (2003) (behaerver) observe (behavioral pr.) that human language is hardly metaphor free (LERAI#14, sentence no.#5).

In the above examples, the verbs talk, watch and observe involve physiological and psychological acts. Also, the examples contain only one participant.

5.2 A Quantitative Transitivity Analysis of LIRAIs and LERAIs

In the following section, the frequencies of the different process types of transitivity system within ILRAIs and ELRAIs are presented. The next table summarizes the percentage of the six process types in the ILRAIs and ELRAIs which were found to have a higher frequency of material process, followed by relational, mental, verbal, existential, and behavioral processes.

Table 2

The distribution of the six process types in the introduction section across both sub-corpora.

<table>
<thead>
<tr>
<th>The six processes</th>
<th>LERAIs (%)</th>
<th>LIRAIs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>199 (39)</td>
<td>329 (43.1)</td>
</tr>
<tr>
<td>Mental</td>
<td>90 (17.6)</td>
<td>102 (13.4)</td>
</tr>
</tbody>
</table>
As table 2 indicates, the two subsets of linguistics share a similar pattern in terms of the frequency of the six process types where material processes outnumber the other processes. In addition, relational processes occupy the second rank, followed by mental, verbal, existential, and behavioral. Material processes represent the researcher's objective concentration and indicate avoidance of subjectivity. The highest percentage of material processes may be due to the nature of objectivity required in linguistics as a soft science.

Another noticeable finding is the dominance of relational processes following the material ones. Relational clauses are used generally to characterize and to identify. More specifically, they are used to provide more accurate information or to illustrate the relationship between research questions and findings. Thus, their use will add descriptiveness and preciseness to the linguistics RAs. The predominance of material and relational processes shows linguistic writers as objective and accurate. The table also indicates the low number of existential processes which can be ascribed to the intent of writers in the field of linguistics to emphasize the accuracy of the results and minimize personal utterances. The rarity of behavioral processes as observed in the table may be due to their focus on human behaviors. Also, it has been found that the use of the six processes in the international sample outnumbered their use in the Egyptian one. This difference may be explained by Egyptian writers' unawareness of the significance of using those types of processes.

<table>
<thead>
<tr>
<th></th>
<th>Relational</th>
<th>Verbal</th>
<th>Existential</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>149</td>
<td>29.2</td>
<td>220</td>
<td>28.8</td>
</tr>
<tr>
<td></td>
<td>56</td>
<td>11</td>
<td>85</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>2.9</td>
<td>25</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.1</td>
<td>2</td>
<td>0.3</td>
</tr>
</tbody>
</table>

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The next section analyzes the two types of nominalization selected to be investigated in the current study: verbal nominalization and adjectival nominalization.

5.3 A Qualitative Analysis of Nominalization in Egyptian and international RAIs in Linguistics

The following examples taken from the international and Egyptian datasets show that writers depend on using nominalization as a crucial resource for constructing academic discourse.

19. EMI illustrates the deeply rooted importance attributed to English proficiency in many … societies… (LIRA#4, sentence no.#8).

20. Psycholinguistic research has centered on investigating learning difficulties … Errors are the mistakes made by a group of learners, due to unawareness of the existing rules (LERA#16, sentence no.#5-6).

In these examples, there are four instances of adjectival nominalization where four attributes are expressed in the form of a noun. That is, the words importance, proficiency, difficulties, unawareness function as the nominalized forms of important, proficient, difficult and awareness, respectively. The congruent form of the first example is 'EMI illustrates that to be proficient in English in many non-English Asian societies is very important', and that of the second one is 'psycholinguistic research has centered on investigating
what is difficult in learning'. However, the writers prefer using nominalization as it helps them provide the audience with more easily comprehensible content.

Following are two examples of nominalization from both corpora. They demonstrate that nominalization helps writers concentrate on the most significant information. Moreover, they involve adjective nominalization (effectiveness) and two instances of verb nominalization where need and research are examples of *verbs and nouns have the same stems*.

21. However, the *effectiveness* of teaching grammar to support language learning is under debate (LIRA#19, sentence no.#3).

22. However, this *need* is not sufficiently met by previous *research* (LERA#17, sentence no.#10).

In the above mentioned examples, nominalization is mainly used for a more concise and stylistic representation of meaning.

The subsequent examples indicate that writers implement nominalization to reintroduce the results or structure of their studies in a compressed way as follows:

23. Our results show notable *associations* between the move structure and the visuals used in the articles (LIRA#7, sentence no.#23).

24. … section five includes a *discussion* and our *conclusion* for the results of the data *analyses* (LERA#18, sentence no.#24).
These excerpts include two types of verbal nominalization. The first one is *verbs have suffixes added to become nouns* (e.g. discussion; association) where *discussion* as well as *association* function as the nominalized form of discuss and associate. The second one is *verbs change their stems to become nouns* (e.g. conclusion; analyses) in which *conclusion* and *analyses* function as the nominalized forms of 'conclude' and 'analyze'. The nominalized forms manage the writers to present the text in a simple, attractive, and economic way and as a result establish an interactive relationship with readers.

5.4 A Quantitative Analysis of Nominalization in Egyptian and international RAIs

<table>
<thead>
<tr>
<th>Table 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Frequency and percentage of nominalization types in LERAIs and LIRAIs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>LERAIs</th>
<th>LIRAIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>F (%)</td>
<td>F (%)</td>
<td></td>
</tr>
<tr>
<td>1-Adjective to noun</td>
<td>62</td>
<td>98</td>
</tr>
<tr>
<td>2-V.s and N.s have the same stems</td>
<td>57</td>
<td>102</td>
</tr>
<tr>
<td>3-Verbs change their stems</td>
<td>41</td>
<td>79</td>
</tr>
<tr>
<td>4-Verbs have suffixes added</td>
<td>100</td>
<td>134</td>
</tr>
</tbody>
</table>

Table 3 reveals the most and the least nominalized expressions used in the introduction sections in both sub-corpora. That is, the shift from process (verb) to thing (noun) is extremely common in both datasets. More specifically, the number of frequencies of the sub-types of *verb to noun* exceed the number of frequencies of the second type (the shift from adjective to noun). As for the sub-types of verb to noun, *verbs have suffixes added to become nouns* have the highest percentage within both subsets with 38.5%, and 32.4%, respectively. *Verbs and
nouns have the same stems rank second in terms of frequencies whereas verbs change their stems to become nouns represent the least frequently used type of verb nominalization.

Through using nominalization in texts, the writer manages to delete the human agency and hence nominalization is a way of expressing objectification. It is also employed to foreground some concepts or meanings so as to focus on them and to background personal voice. Therefore, it helps link up sentences and accordingly contributes to the cohesion of the text. Nominalization is used sometimes to describe complex processes easily. It was observed that nominalization include a higher percentile in the international corpus than its Egyptian counterpart. This difference may be explained by the international writers' acquaintance with the conventions of writing in general and the significance of using nominalization in their writing in particular.

5.5 Tense Usage and Voice Choice in LIRAIs and LERAIs.

Table 4 clarifies the total frequency occurrences of tense and voice within both datasets of linguistics.

Table 4

<table>
<thead>
<tr>
<th>The use of tense &amp; voice</th>
<th>LERAIs (%)</th>
<th>LIRAIs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present simple</td>
<td>379 66.0</td>
<td>372 58.7</td>
</tr>
<tr>
<td>Past simple</td>
<td>66 11.5</td>
<td>65 10.3</td>
</tr>
<tr>
<td>Present perfect</td>
<td>77 13.4</td>
<td>103 16.2</td>
</tr>
<tr>
<td>Present perfect continuous</td>
<td>2 0.3</td>
<td>1 0.2</td>
</tr>
<tr>
<td>Present continuous</td>
<td>3 0.5</td>
<td>2 0.3</td>
</tr>
<tr>
<td>Future simple</td>
<td>6 1.0</td>
<td>5 0.8</td>
</tr>
<tr>
<td>Modals</td>
<td>41 7.1</td>
<td>86 13.6</td>
</tr>
</tbody>
</table>
As indicated in table 4, the present simple, the present perfect, and the past simple were the most used tenses within the two samples. Using these tenses was according to the function of each one and this variety indicates the complexity of linguistic features. The table also shows that the present simple has the highest percentage in the two groups (LERAI: 66% vs. LIRA: 58.7%). The present perfect occupies the second rank (LERAI: 13.4% vs. LIRA: 16.2%), and the past simple ranks third in both groups (LERAI: 11.5% vs. LIRA: 10.3%). Present perfect continuous, present continuous, and future simple tenses were rarely used in both samples. Concerning modals, they were used in LIRA as twice as their occurrence in LERAI (13.6% vs. 7.1%). As for the voice choice, the active was used as four times as the passive voice in LERAI and as five times the passive in LIRA.

The present simple is used to present and discuss concepts and definitions related to the investigated study. For example:

25. moves are “discoursal or rhetorical units performing … functions in texts” (LIRA#9, sentence no.#2).

This tense was also used to describe the study under investigation. For instance:

26. The present study concerns the impact of short-term and working memory on receptive vocabulary… (LIRA#11, sentence no.#1).

<table>
<thead>
<tr>
<th>Voice</th>
<th>470</th>
<th>81.9</th>
<th>529</th>
<th>83.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>104</td>
<td>18.1</td>
<td>105</td>
<td>16.6</td>
</tr>
</tbody>
</table>
It was sometimes used to make general statements like the following quotation:

27. Studying humor … *enables* decision makers to trace and detect the problematic issues … (LERA2, sentence no.#2).

In contrast, the past simple was used to describe past actions or to refer to previous studies. For example:

28. Pronin, Lin and Ross *found* that although individuals can often spot such biases in others… (LERA3, sentence no.#19).

The past simple was sometimes used to discuss the methods applied to carry out a research. For instance:

29. In this study, we *created* a hypothesized model of pronunciation learning based on … (LIRA14, sentence no.#15).

The present perfect was used mainly to refer to the studies which has been conducted on a specific aspect or relation among different variables. For instance:

30. Many researchers *have applied* versions of this method of analysis in order to uncover the underlying generic structure… (LIRA#9, sentence no.#6).

6. Results and Discussion

To answer the first research question, Halliday' (1967) systemic functional grammar was adopted to identify the process types of transitivity. The analysis of transitivity system revealed that the two samples share resemblance where material processes had the highest frequency (LERAI: 199 (39%) vs. LIRAI: 329 (43.1%).
Material processes were followed by relational (LERAIs: 149 (29.2%) vs. LIRAIs: 220 (28.8%), and mental processes (LERAIs: 90 (17.6%) vs. LIRAIs: 102 (13.4%). These findings are in parallel with those of Jomaa and Bidin (2019) and Zheng (2021). Moreover, the selected corpora had a lower number of existential processes, aligned with Zheng’s (2021) finding. It has also been found that behavioral processes were rarely used (LERAIs: 1 (0.1%) vs. LIRAIs: 2 (0.3%).

To answer the second question, Halliday's (1967) SFL also was used to analyze nominalization. The findings revealed that there were striking similarities between the Egyptian and international writers with respect to the employment of nominalization. That is, the use of *verb (process) to noun (entity)* outnumbered the use of *adjective (quality) to noun (entity)* in both corpora (LERAIs: 198 (76.2%) vs. LIRAIs: 315 (76.3%). This finding is in line with Mehrabi, et al. (2018) and Kaidan, Jalilifar, & Don (2018) who postulated that those two kinds were prevalent in texts and verb to noun dominates the other types. More specifically, *verbs have suffixes added to become nouns* predominated the other types of *verb to noun* and *verbs change their stems to become nouns* represented the least frequently used type of *verb to noun* across both corpora (LERAIs: 41 (20.7%) vs. LIRAIs: 79 (25.1%).

To answer the third question, Celce-Murcia & Larsen-Freeman's (1999) model were adopted to examine the employment of different tenses and voices. The findings showed that the present simple, the past simple and the present perfect were the most used tenses within both sub-corpora. Aligned with Hinkel's (2004b) findings, the present simple was the predominant tense across the two groups (LERAIs: 379 (51.6%) vs. LIRAIs: 372(55.6%). The past simple ranked second in the
two groups (LERAIs: 66 (51.6%) vs. LIRAIs: 65(55.6%). This result is in accordance with Abarghooeinezhad& Simin's (2015) result. In addition, it has been found that the present perfect occupied the third rank in the two datasets (LERAIs: 77(13.4 %) vs. LIRAIs: 103(16.2%).

Regarding voice choice, the findings of the present study revealed that the active voice outnumbered the passive one (LERAIs (active 470 and passive 104) vs. LIRAIs (active 529 and passive 105) agreeing with the findings of Nurhayati& Jakarta (2017). These findings completely contradict some studies which found the frequent use of the passive or the equal use of active and passive voices (Hinkel, 2004b& Abarghooeinezhad& Simin, 2015).

7. Conclusion

In this study, three linguistic features (transitivity system, nominalization types, tense usage, and voice choice) were investigated in 50 introductions of RAs published in Egyptian and international journals. The findings showed that material processes which indicate actions were the most used type compared to the other processes across both datasets. Also, it has been found that the two groups of linguistics bear some resemblance to each other in terms of the frequency of types of nominalization. That is, the shift from process (verb) to noun predominated the shift from adjective to thing (noun). In addition, verbs have suffixes added to become nouns had the highest percentage across both sub-corpora and verbs change their stems to become nouns have the least percentage.

The analysis also indicated that the only difference between the Egyptian and international corpus is that the number of frequencies of nominalized expressions in the international sample is greater than the...
Egyptian counterpart. The Egyptian writers' lower rate of using nominalization may be ascribed to the lack of their mastery of using metaphorical expressions in English. Regarding tense usage, the present simple was found to be used more frequently than the other tenses within both samples. As for voice choice, the active voice outnumbered the passive one throughout the two groups.
Works Cited


(Syntactic and Semantic Analysis …) Mai Ashraf

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Appendix A

List of Research Articles in the Egyptian Sub-corpus

Egy. (2)

Egy. (3)

Egy. (4)

Egy. (6)

Egy. (10)

Egy. (12)

Egy. (14)

Egy. (15)

Egy. (16)
Egy. (17)

Egy. (18)

Appendix B
List of Research Articles in the international Sub-corpus

(Int. 1)

(Int. 2)

(Int.3)

(Int.4)

(Int. 5)

(Int. 7)

(Syntactic and Semantic Analysis …) Mai Ashraf
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ملخص

يسعى هذا البحث إلى تحليل أنواع عملية التعديل للفعل، ونوعين من التحويل الاسمي، والمبني للمعلوم والمجهول، واستخدام الأسماء في مقدمات مقالات بحثية كتبها باحثون مصريون ودوليون في مجال اللغويات. تتكون عينة الدراسة من 50 مقالة تم اختيارها من المجلات المصرية والدولية من 2014 إلى 2021. تستخدم الدراسة قواعد اللغة الوظيفية النظامية (06:91) لتحديد عمليات التعديل للفعل وأنواع التحويل الاسمي. كما تعتمد على كل من التقنيات النوعية والكمية لتحليل البيانات المختارة. وقد وجد أن两 المجموعتين كانتا متشابهتين من حيث أنواع عملية التعديل. أي أن العملية المادية كعملية فعل أو حدوث، كان لها أعلى نسبة مقارنة بالعمليات الأخرى. استخدمت كلتا العينتين أيضا النوع الأول من التحويل الاسمي (الفعل إلى الاسم) بشكل متكرر أكثر من النوع الثاني (الصفة إلى الاسم).

أما بالنسبة للمعلوم والمجهول واستخدام الأسماء، فقد وجد أن كلا من المقالات المصرية والدولية متضابطة في استخدام المضارع البسيط أكثر من باقي الأسماء والمبني للمعلوم أكثر من المبنى للمجهول. وساهم البحث الحالي في فهم أفضل نظام التعديل الفعال وأنواع التحويل الاسمي واستخدام الأسماء والمبني للمعلوم والمجهول. الغرض منه هو تزويد الباحثين المصريين والدبلوميين بالقواعد المختلفة لكتابة مقدمات المقالات البحثية التي تساعدهم على التدرب على كتابة مقدماتهم الخاصة وبالتالي إنتاج مقدمات أكثر فعالية.

(Syntactic and Semantic Analysis …) Mai Ashraf

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