

## **Verbs in Applied Linguistics Research Article Introductions: Semantic and syntactic analysis**

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### **Abstract**

This study aims to investigate the semantic and syntactic features of verbs used in the introduction section of Applied Linguistics research articles published in Iranian and international journals. A corpus of 20 research article introductions (10 from each journal) was used. The corpus was analysed for the syntactic features (tense, aspect and voice) and semantic meaning of verbs. The findings showed that in both groups of introductions, the common tenses were the present and past, rather than future. In introductions published in the international journal, the present tense was used more often than in those published in the Iranian journal, whereas past tense was used twice as frequently in Iranian journal introductions. Regarding the aspect of verbs, the simple aspect was common in both groups of introductions, but more frequent in Iranian journal introductions. The perfect aspect was more common in international journal introductions. Concerning voice, the active voice was predominant in both groups of introductions. Semantically, verbs with mental, activity, communication and existence meanings were common in both groups. The semantic meanings of verbs were not significantly different in the two groups of introductions. The findings of this study can have implications for novice, non-native writers in Applied Linguistics in helping them design and write more appropriate research article introductions.

**Keywords:** verb, tense, aspect, voice, semantic meaning, syntactic analysis

### **Introduction**

An experimental research article (RA) is a text in which the developmental stages of a scientific experiment are documented. It usually has a fixed format of sections, and generally follows the Swales structure of introduction, method, result and discussion (IMRD). The first section, the introduction, provides the anchor point, after the title. According to Jalilifar (2009), this section is written to give information on several features of the research, such as the background, rationale, gap in the literature, objectives and research questions of a study. These functions mean that the introduction section is a pivotal sub-genre in academic writing, as the likelihood of publishing a research article is highly related to how well this section is written. Writing such an introduction section is challenging to RA writers, especially non-native writers in an EFL context.

### **Review of Literature**

In the last three decades, a number of researchers have studied research article introduction sections (RAIs) from one or more disciplines, in order to investigate rhetorical structure and/or linguistic features (Gledhill, 2000; Samraj, 2002; Fakhri, 2004; Hirano, 2009;

Ozturk, 2007; Loi and Evans, 2010; Sheldon, 2011; Martin and Perez, 2014). Samraj (2002) investigated research article introductions from two dependent fields, namely Wildlife Behaviour and Conservation Biology. She analysed 12 research articles introductions using the Swales (1990) model of moves and steps analysis. The results of the analysis showed disciplinary variation in the structure of introduction sections. In the Conservation Biology introductions, writers fulfilled a greater promotional function than did those of the Wildlife Behaviour introductions. This promotion was achieved through the use of steps, such as centrality claims. Ozturk (2007) studied the rhetorical organization of RAIs in journals devoted to sub-disciplines of applied linguistics, in order to highlight the possible variations. He analysed 20 RAIs extracted from two journals of language acquisition and second language writing research. He used the Swales (1990) CARS model for analysis, and reported that the variations found regarding the rhetorical organizations of the two groups of introductions could be explained in terms of the concepts of 'established' and 'emerging' fields of studies. Saz Rubio (2011) investigated the rhetorical organization and metadiscourse features of RAIs of agricultural sciences. He used the CARS model to analyse the data, and found that the application of Swales' CARS models showed no major departure from the traditionally given M1 + M2 + M3 rhetorical pattern; he also showed that particular step combinational patterns were used to attain different communicative purposes. The findings revealed that evidential, transition markers and code glosses are the most persistent interactive categories. Regarding interactional metadiscourse markers, hedges and boosters received the greatest attention. Soler, Carbonell and Luz Gil (2011) focused on the rhetorical organization of English and Spanish PhD thesis introductions. They analysed 20 doctoral theses on computing, written in either Spanish or English. The analysis followed the Swalesian approach of move and steps analysis. Results showed that move 1 and move 3 are obligatory moves in PhD thesis introductions in Spanish, whereas move 2 is optional. The structure of English thesis introductions showed that they conform more closely to the M1-M2-M3 arrangement.

Martin and Perez (2014) examined the rhetorical structure of the introduction section of 80 research articles Spanish and 80 written in English. The research articles were from four disciplines in the fields of Humanities/Social and Sciences Health Sciences. To be more precise, they focused on how writers show their research in move 3 following Swales (1990). Their focus was on those steps that add promotional value to one's research. Findings of their studies showed that in the same field, "the English texts present a higher degree of rhetorical promotion than the Spanish texts in each of the disciplines analysed" (Martin and Perez, 2014 p.1). They also found that, however, during the comparison of the two broad fields, "the Spanish texts in Health Sciences present a higher degree of promotion than the English (and Spanish) texts in Humanities/Social Sciences. This indicates that, in shaping the promotional features of the (sub) genre in question, when professional and national cultural variables interact simultaneously, cultural factors tend to override the influence of disciplinary context. However, when broad fields of knowledge are compared, it is the disciplinary conventions in specific professional sub-cultures that seem to prevail over national cultural factors" (Martin and Perez, 2014).

The reviewed literature clearly indicates that the RAI section has been mostly studied in terms of its rhetorical structure, whereas its linguistic features have received little attention. Therefore, this study aims to study the semantic and syntactic features of verbs used in the RA introduction sections of Applied Linguistics research articles published in Iranian local journals and in ISI international journals. The findings of this study could act an empirical guide to enable writers to improve their skills in writing RAIs, and help them to be more successful in publishing RAs in ISI journals. Thus, this study sought answers to the following research questions:

Q1. What are the syntactic features of verbs used in RAIs published in Iranian journals and ISI international journals?

Q2. Are there any differences in the syntactic features of verbs used in RAIs published in Iranian journals and in ISI international journals?

Q3. What are the semantic meanings of verbs used in RAIs published in Iranian journals and in ISI international journals?

Q4. Are there any differences in the semantic meanings of verbs used in RAIs published in Iranian journals and in ISI international journals?

## **Method**

### **Corpus**

This study was carried out using a corpus of 20 RAIs published in Iranian local journals and in ISI international journals: 10 RAIs were selected from two Applied Linguistics journals published by Elsevier, which are indexed in Thomson Reuters. These journals are *English for Academic Purposes* and *English for Specific Purposes*. The RAIs were extracted from 2014 and 2015 issues of the journals, and their RAI sections were then separated for analysis. For RAIs written by non-native writers, 10 RAIs were selected from an Applied Linguistics journal published by and indexed in ISC. To this end, 10 RAIs were selected from the *Journal of Research in Applied Linguistics*. The selected RAIs were published in the 2014 and 2015 issues of the journal.

### **Analytical framework**

To analyse the data for syntactic features, the tense, aspect and voice of verbs were considered. Tense comprises the three tenses of present, past and future. Aspect consists of simple, progressive and perfect. Voice can be either active or passive.

To analyse the data for the semantic meanings of the main verbs used in RAIs, Biber et al.'s (1999) classification was used. Their classification includes seven semantic domains as follows:

- ▶ Activity verbs which are concerned with what people do (e.g. use, give, make, build, perform, measure)
- ▶ Communication verbs involving such communication activities as speaking and writing (e.g. describe, discuss, debate, argue, introduce, suggest)
- ▶ Mental verbs describing cognitive states and activities (e.g. know, believe, remember, understand, consider, design, study, investigate), which also include attitudinal or emotional states (e.g. prefer, love, enchant)
- ▶ Verbs of existence or relationship denoting a relation or a state exists between entities (e.g. include, represent, define, link, associate, relate, influence)
- ▶ Verbs of facilitation or causation indicating a new state of affairs brought about (e.g. cause, allow, require, need, influence)
- ▶ Verbs of simple occurrence reporting the occurrence of events (e.g. develop, grow, increase, change)
- ▶ Aspectual verbs denoting the stage of progress of events or activities (e.g. keep, continue, hold).

### **Procedure**

In order to analyse the syntactic and semantic structures of the data, the following procedures were performed. First, the RAIs were selected from the target journals. Second, the RAI sections were extracted from the selected RAIs. Third, the data were analysed for tense,

aspect and voice. Fourth, the main verbs were analysed for their semantic meanings. Fifth, a sample of eight RAIs was checked by two experts in the area of Applied Linguistics, in order to increase of reliability and validity of analysis. Sixth, the findings were tabulated and analysed.

### Results and Discussion

The data were analysed in terms of tense types and aspects. The results are presented in Table 1.

**Table 1. Frequency and Percentage of Tense Types and Aspects**

	Present simple	Present perfect	Past simple	Other tenses and aspects	Total
RAIs written by native writers	<b>147 (57%)</b>	<b>53 (23%)</b>	<b>41 (16%)</b>	<b>18 (7%)</b>	<b>259</b>
RAIs written by Persian writers	<b>119 (59%)</b>	<b>23 (11%)</b>	<b>42 (21%)</b>	<b>18 (9%)</b>	<b>202</b>

The results in Table 1 indicate that simple present is the predominant tense and aspect in both sets of RAIs. These findings are more pronounced than those reported by Salger-Mayer (1992) and Li and Ge (2009). Salager-Meyer (1992) analysed RA abstracts, and found that the simple present tense was used in 40% of the sentences. Thus, the difference between the findings of this study and that of Salager-Meyer (1992) could be due to the difference in genres being analysed. It seems that genre has an influence on the selection of tense types and aspects. Li and Gee (2009) analysed RAIs from medical disciplines, and found that the simple present tense was used in 25% of the sentences. The difference could be attributed to the different natures of the disciplines: the present study focused on RAIs from Applied Linguistics, whereas Li and Gee (2009) analysed medical RAIs.

The predominance of the simple tense could be due to realizing steps in RAIs, such as making topic generalizations, indicating the research gap, outlining purposes, outlining principal findings and implications, and indicating the research article structure (Examples 1–6).

**Example 1:** the study of academic discourse, or the language of the academy, is central to the development of academic literacy as it models the diverse linguistic patterns valued in educational context, particularly that of tertiary institutions. (International Journal)

**Example 2:** the current research investigates the use of evaluative language in a corpus of doctoral discussions written by L1 Chinese and L1 English writers. (International Journal)

**Example 3:** the article is organized as follow. (International Journal)

**Example 4:** the current study has implications for the comparison of oral production and (the more commonly researched) written production, for understanding the sequence of development, and for planning EAP instruction and curriculum design. (International Journal)

**Example 5:** As in many countries, teaching English for specific purposes (ESP) has a marginal status in Iranian tertiary education. (Iranian local Journal)

**Example 6:** this study investigates how Iranian scholars revise their manuscript by comparing the transitivity system of PS and AP versions of their manuscripts (Iranian local Journal)

The second most common tense in RAIs published in Iranian local journals was the past simple, whereas in the international journal RAIs it was the present perfect. This difference might suggest that Persian writers prefer to review earlier studies more than do writers of international journal RAIs. This might result from the fact that most of the analysed RAIs were extracted from thesis RAs. In such RAs, writers are mostly novice writers who construct their studies on previous ones, and seek gaps in the existing literature (Example 7). The greater use of the present perfect in RAIs published in the international journal might suggest these writers' preference for claiming the centrality of their study. They also prefer to convince editors and reviewers that the investigated topic has been the concern of researchers over a period of time (Example 8).

**Example 7:** Some of these studies have provided an analytical description of the detailed steps employed in developing students' circumlocution strategies. (Iranian local Journal)

**Example 8:** However, few studies have compared the linguistic features of academic writing with those of popular writing, which is viewed as "rhetorical transformation" of academic writing (Swales, 1990). (International Journal)

**Table 2.** *Frequency and Percentage of Passive and Active Voices*

	Active	Passive	Total
RAIs written by native writers	<b>227 (88%)</b>	<b>32 (12%)</b>	<b>259</b>
RAIs written by Persian writers	<b>188 (93%)</b>	<b>14 (7%)</b>	<b>202</b>

The greater use of the active than the passive voice was evident in both sets of corpora. This result could be attributed to the fact that information, claims and literature presented in RAIs are expected to be clearly stated and cited; thus, using the passive voice could create ambiguity in RAIs. In this respect, Hacker (2003) states that 'active verbs express meaning more emphatically and vigorously than their weaker counterparts, verbs in the passive voice', which 'lack strength because their subjects receive the action instead of doing it' (p. 128). The lower incidence of the passive voice might suggest that 'in much scientific writing, the passive voice properly puts the emphasis on the experiment, participants, or process being described, not on the researcher' (Hacker, 2003, p. 130) (Examples 9–10). Another justification for using the active rather than the passive voice might be that some academic writing manuals emphasize using the active voice whenever possible. The greater use of the active voice might suggest the increased use of reporting verbs, which require the active voice.

**Example 9:** During the third stage or the phrase procedure level, the learner is assumed to exchange grammatical information at intraphrasal level, without still being able to exchange grammatical information at intraphrasal level (Iranian local Journal)

**Example 10:** the AWL was also assessed in a wide range of academic disciplines, and results showed that it registered a fairly stable coverage of roughly 10% in various disciplines (International Journal)

**Table 3.** Frequency and percentage of the semantic meaning of verbs

Semantic meaning	RAIs written by native writers	RAIs written by Persian writers
Activity verbs	30 (17%)	22 (18%)
Communication verbs	24 (14%)	15 (12%)
Mental verbs	61 (34%)	44 (35%)
Verbs of existence or relationship	38 (21%)	17 (14%)
Verbs of facilitation or causation	16 (9%)	15 (12%)
Verbs of simple occurrence	8 (4%)	8 (6%)
Aspectual verbs	1 (1%)	3 (3%)

The results in Table 3 indicate that the most common verb type was ‘mental’ in both corpora. The frequency of mental verbs was less pronounced than in the findings reported by Zhang (2015). The greater use of mental verbs in the RAIs analysed might be imposed by the rhetorical functions of RAI moves and steps. In both corpora, these kinds of verbs were used to report earlier studies and state the aim of the study (Examples 11–14).

**Example 11:** Parkinson and Musgrave (2014) investigated the development of complexity by focusing on different structures used by advanced EAP students to complexify noun phrases in written texts. (International Journal)

**Example 12:** through an analysis of student reading blogs, we investigate the strategies students report and the relationship between the strategy selected and text (see research questions 1 and 2 below). (International Journal)

**Example 13:** they investigated whether all learners who showed some emergence of the passive construction in Japanese in a self-paced oral task would also use it skillfully in a time-consuming task. (Iranian local Journal)

**Example 14:** therefore, this study investigates how Iranian scholars revise their manuscript by comparing the transitivity systems of PS and AP versions of their manuscripts. (Iranian local Journal)

Activity verbs received similar levels of attention from both groups of writers. More detailed analysis indicated that this verb was mostly used to report the process of earlier studies cited in the literature (Example 15-16). Thus, this verb is mostly used in realizing the step of presenting the literature.

**Example 15:** Also, the acronym ERPP, first introduced by Cargill and Burgess (2008) has been used to refer to “a branch of EAP addressing the concerns of professional researchers and post-graduate students who need to publish in peer-reviewed international journals” (Cargill & Burgess, 2008, P.75) and as an alternative term to phrases recurrently appearing in the existing

literature like “English for academic publishing”, “English for research writing” or “English for scientific research”. (International Journal)

**Example 16:** Bhabha’s (1994) widely used notion of unhomeliness and hyirdirdity have been welcomed and critically examined by many writers and critics. (Iranian local Journal)

Verbs of existence or relationship were used by both groups of writers to present a) the relationship between entities (Examples 17–18), b) facts concerning entities (Examples 19–20), and c) definition of entities (Examples 21–22).

**Examples17:** in a sentence with subject it-extrapolation, the main clause expresses the stance of the writer. (International Journal)

**Example 18:** The concept of dynamic assessment originated with Reuven Feuerstein (1980), who believed in the facilitative and mediating role of the instructor (Schneider & Ganschow, 2000). (Iranian local Journal)

**Example 19:** the assessment of student writing and speeches usually has included the requirement to produce a variety of structures. (International Journal)

**Example 20:** Their usual problem lacks appropriate L2 words in their vocabulary repertoire to express their meanings. (Iranian local Journal)

**Example 21:** As regards non-linguistic impediments, Canagarajah (1996) identified several “non-discursive requirement” that interfere in publication and classified them into three distinctive groups: material, financial, and social. (International Journal)

**Example 22:** Kluckhohn (1951) defined a value as an explicit or implicit conception which is distinctive of an individual or a group and can influence the selection from obtainable modes, means, and ends of action. (Iranian local Journal)

Communicative verbs (Examples 23–24) received little attention from both sets of corpora. It seems that the writers in RAIs only communicated earlier findings, and did not present any claims in the RAIs. Other types of verbs also received little attention, which suggests that such verbs could not be considered as a norm in RAIs.

**Example 23:** Accordingly, they argue for the need to develop academic vocabulary lists for various specific disciplines. (International Journal)

**Example 24:** Based on these ideas, it can be suggested that traditional tests lack the merit of measuring the knowledge and skills of language learners with high degrees of validity and reliability. (Iranian local Journal)

### Conclusion

This study investigated the semantic and syntactic features of verbs used in the RAIs of Applied Linguistics RAs published in Iranian local journals and ISI international journals. The results concerning syntactic structure indicated that in both groups of RAIs, the simple present was the predominant tense. This appears to be because writers present facts, define entities, state aims and outline purposes in RAIs; thus, the use of this tense is motivated by the rhetorical

functions of moves and steps of RAI. The results suggested differences between the corpora regarding two other tenses that received noticeable attention. These differences can be attributed to the differing language backgrounds of the writers. In RAIs written by Persian writers, the RAIs were extracted from RAs mostly written as master's theses. In such RAIs, writers tend to cite earlier studies and more frequently use the simple past tense. In RAIs written by native writers, the writers prefer to signify and claim centrality; they add their study to the continuum of studies conducted during recent decades by using the present perfect tense. To conclude, writers need to be aware that tenses can help editors and reviewers to judge the skill and knowledge of the writer, and they can play a pivotal role in the realizations of moves and steps within the RAI.

Regarding voice, the active was predominant, which may be expected given that it is the preferred tone in academic writing. This is especially evident in the RAI section, where writers have to claim the centrality, significance and importance of the study; this requires creating structures where the subject is the performer of actions. Such structures are the norm in academic writing, and this needs to be highlighted for novice writers.

Concerning the semantic meaning of verbs, three kinds of verbs were used especially frequently: mental, activity, and existence or relationship verbs. These kinds of verbs are helpful in realizing the steps and moves of RAIs; thus, writers need to be aware that such verbs play pivotal roles in highlighting this process. It can be concluded that the syntactic and semantic structure of verbs is highly influenced by and related to the realizations of steps and moves of RAIs.

This study could have implications for novice non-native writers in the Applied Linguistics field of study. The findings of this study could be used to help design syllabi and practices in teaching RAI writing.

Based on the findings of this study, it could be suggested that similar further studies on the realizations of verb in other sections of research article from different disciplines could be carried out. Such studies could add to the knowledge of developing the sections of research article and plot the disciplinary influence on selections and functions of verbs in research article's sections.

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