

Expressing Certainty in Discussion Sections of Qualitative and Quantitative Research Articles

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This paper investigates how boosters are used by qualitative and quantitative research article writers to express certainty. Boosters are words such as *definitely*, *sure*, *demonstrate* which signal writers' assurance in what they say. Drawing on a corpus of 200 research articles in Applied Linguistics, this study compares the use of boosting words in the Discussion sections of qualitative and quantitative research articles in Applied Linguistics. The focus is on the frequency, main functions and form of boosters in these two sets of articles.

Key Words: Boosters, Qualitative Research Articles, Quantitative Research Articles, Applied Linguistics

1 Introduction

It is now widely accepted that professional academic discourse is not merely presenting informational content objectively but is a socially situated practice (Candlin, 2000; Hüttner, Smit, & Mehlmauer-Larcher, 2009; Hyland, 2008) by which writers interact with their audience. To gain community acceptance, thus, writers need to present their work in a way that their readers find it persuasive. Crismore and Farnsworth (1990, p. 118) point out that "it is a very dangerous myth that sees professional scientific writing as the impersonal statement of facts that all add up to the truth". This interaction can help writers to achieve persuasion which is the ultimate aim of any academic writing. According to Hyland (1999, 2008) one of the ways of accomplishing interaction in a text is through stance. The concept of stance is not "a monolithic concept" (Englebretson, 2007, p. 1) and has been defined and conceptualized broadly and variously. Generally, stance is defined as linguistic mechanisms which are used by writers/speakers to reveal their feelings, evaluations and opinions on a given matter. According to Hyland (2008, p. 5), stance which is writer-oriented aspect of interaction "refers to the writer's textual 'voice' or community recognized personality" which is used "to stamp their [writers'] personal authority onto their arguments or step back and disguise their involvement" (2005b, p. 176). Boosters are one of the

elements that Hyland (1999, 2008) includes as a stance feature in his taxonomy of interaction.

Boosters (also known as emphatics, intensifiers, strengtheners and upgraders) are words such as *definitely*, *sure*, *demonstrate* which signal writers' assurance in what they say (Hyland, 1999, 2005b, 2008). Along the same line, Holmes (1982) refers to the boosters as lexical items that a writer can use to show strong conviction for a statement. They strengthen an utterance's illocutionary force, which is the opposite of the effect of downtoners, the term Holmes uses for hedges. In other words, the boosters mark the writer's certainty and commitment to a particular assertion. Bondi (2008, p. 33) points out that boosters "foreground the writer's degree of endorsement of a statement and the degree of universality of the related belief" by highlighting the main points in the writer's argument.

By using boosters, the writers leave little room for the readers' own interpretation and "close down alternatives", "head off conflicting views" (Hyland, 2005a, p. 52) and "confront doubt on the part of a listener" (Donohue, 2006, p. 208). Establishing the writers' own "definition of the situation, strategically presenting information as consensually given" is a way that writers can negotiate the status of their claims (Hyland, 2000, p. 100). The use of boosters signals writers' awareness of a reader and alternative interpretations which play a part in construction of dialogue and conversation in the text (Donohue, 2006; Hyland, 2005a). By limiting possible alternative voices, the use of boosters emphasizes "solidarity with an audience, taking a joint position against other voices" and strengthens "an argument by emphasizing the mutual experiences needed to draw the same conclusions as the writer" (Hyland, 2005a, p. 53). In other words, the boosters allow writers to present their work with confidence "while strategically engaging with colleagues" (Hyland, 2000, p. 97).

Boosters along with hedges are the most frequent metadiscourse markers used by expert writers in English (Hyland, 2005a). They are the main tools that enable writers to take a stance "to both their propositions and their audience" which in turn can influence considerably "a reader's assessment of both referential and affective aspects of text" (Hyland, 2005a, p. 133).

While boosters are an important feature in academic discourse, relatively few studies have addressed them (Bondi, 2008; Silver, 2003). Mostly, the studies have focused either solely on hedges or they have devoted some amount of attention to boosters along with hedges or other metadiscourse features. A number of studies have looked at the use of these features from cross-cultural perspective and have compared native and non-native (both expert and L2 learners) writers' use of these features (Abdollahzadeh, 2003; Hinkel, 2002; Hyland & Milton, 1997a; Vassileva, 2001). Another group of studies have compared the distribution of these

features in various disciplines (Bondi, 2008; Hyland, 1998b, 1999, 2000, 2005a, 2005b, 2008; Peacock, 2006).

Hyland and Milton (1997), using a corpus of one million, investigated how L1 and L2 students expressed doubt and certainty in their writing. They found significant differences between these two groups in that L2 students relied “on a more limited range of items”, offered “stronger commitments”, and exhibited “greater problems in conveying a precise degree of certainty” (Hyland & Milton, 1997b, p. 183). Their findings showed that while two-thirds of the modifiers were used by the native speakers to weaken their claims, non-native speakers used more than half of the devices to strengthen their claims. Abdollahzadeh (2003) investigated the use of metadiscourse in RAs written by Anglo-American and Iranian writers and found out that Iranian writers used more boosters than their Anglo-American counterparts.

Vassileva (2001) concentrated on the expressions of commitment (i.e. boosters) and detachment (i.e. hedges) in Bulgarian and English academic texts and found out that Bulgarians used more boosters and less hedges than native English writers while writing in English. She also investigated the distribution of these features in Introduction, Discussion, and Conclusion sections of RAs. Her findings revealed that English RAs favored hedges and boosters in the Discussion section (with more than 60% of occurrences in this section) but used more hedges than boosters. Meanwhile, Bulgarian writers used twice more boosters than hedges in this section.

In a cross-disciplinary examination of using boosters in RAs, Peacock (2006) compared the extent, form, and function of boosters in 216 RAs across six academic disciplines: Language and Linguistics, Business, Law, Public and Social Administration, Physics, and Environmental Science. He found out the highest proportion of boosters in Language and Linguistics and the lowest in Environmental Science. He argued that the boosters played a significant role in persuading readers of the validity of writers’ claims and concluded that “competence in research writing includes a developed knowledge of boosting” (p. 61).

Hyland has conducted several cross-disciplinary studies to investigate the use of stance features and metadiscourse in various disciplines. He (2008) analyzed 240 RAs from eight disciplines of medical engineering, electrical engineering, marketing, philosophy, sociology, applied linguistics, physics, and microbiology. His findings demonstrated the dominance of hedges (14.5 cases per 1000 words, 46.6%) among the stance and engagement features. Hyland also found that the use of stance and engagement markers in RAs of “soft fields” were higher (75% more cases) than in “hard fields”. Comparing the eight disciplines, applied linguistics, after marketing and philosophy, had the highest frequency of hedges and boosters (18 and 6.2 cases per 1000 words, respectively).

Hyland argues that this variation is due to the fact that writers in different disciplines need to “represent themselves, their work and their readers in different ways” (2008, p. 12). He points out that the greater use of stance markers in soft field RAs (for instance, their use of two and half time more hedges) than hard field is that the knowledge in this field is “more interpretative and less abstract” than hard field and to be persuasive writers “rely more on a dialogic engagement and more explicit recognition of alternative voices” (Hyland, 2008, p. 14). Hyland (ibid.) concludes that while arguments in the soft field need “to be expressed more cautiously” they also “have to restrict possible alternative voices by using boosters” as “methods and results are more open to question”.

2 Corpus and Method

The corpus of the study consists of 100 qualitative and 100 quantitative RAs’ Discussion section selected from five high impact journals in the field of Applied Linguistics based on the Journal Citation Reports (Social Sciences Edition) 2008. The list included the journals in Linguistics which covered journals in both pure Linguistics and Applied Linguistics. For the purpose of the study the journals devoted to pure Linguistics were excluded from the list. After examining the remaining journals, the five selected journals were: Applied Linguistics, English for Specific Purposes, Journal of Pragmatics, Language Teaching Research and TESOL Quarterly.

The articles were selected from the issues published from 2002-2009. The first criterion considered in selecting the articles was that they have a separate Discussion section. Therefore, the articles that had combined the Discussion section with Findings, Analysis, Conclusion, Implication or Limitations were excluded. The remaining articles were categorized as qualitative or quantitative, and mixed method articles were excluded. In categorizing the articles as qualitative or quantitative, the priority was given to the article writers’ own explicit statement about the design they had used. If they had not mentioned the method explicitly, which mostly did not, the abstracts and the methodology sections were examined in detail. According to Fred (2005, p. 75) the characteristic of quantitative research is “the use of numbers to represent its data”, and the characteristic of qualitative research is “verbal descriptions as its data”. Those articles that were experimental or completely dealt with statistics were categorized as quantitative and those articles that used qualitative methods and relied mainly on verbal description were classified as qualitative. Problematic cases were discussed and decisions were made by consensus. In a few cases that an agreement was not achieved, a more cautious approach was adopted and those cases were excluded. It should be noted that categorizing the articles as qualitative or quantitative was done based on their methods of data collection and data analysis rather than attempting to identify their underlying philosophy and purpose. Benson,

Chik, Gao, Huang, and Wang (2009) differentiate between the studies that *use a specific type of design* (qualitative and quantitative) and those that *represent a specific type of design* (qualitative and quantitative). The focus of this study was to identify the articles that *used* qualitative or quantitative research methods.

After categorizing the articles in two groups of qualitative and quantitative, they were double checked to ensure that each article was set in the right category. Then, 100 qualitative and 100 quantitative RAs were selected randomly, and two specialized machine readable sub-corpus were compiled. The qualitative sub-corpus consisted of approximately 132,000 words and the quantitative sub-corpus comprised of around 139,000 words (see appendix A for more particulars of the corpus). In the next stage, a list of 117 potentially productive boosters was selected based on previous lists and researches in literature, especially Biber (2006), Biber et al. (1999), Hyland (1998b, 2000, 2005a), Peacock (2006) and Vassileva (2001).

These items were searched in each sub-corpus separately using WordPilot 2002, a text analysis and concordance program. The output included frequency lists, concordance lines, summary and collocations. After each item was searched, a careful analysis of the co-text and context of the cases was carried out for several times to ensure that they were representative of hedging. During this stage several cases were excluded from the initial results. The following extracts are a few examples of instances of results that were deemed irrelevant for the purpose of this study and were excluded. For instance in the below excerpt “certain” means ‘specific’ rather than ‘definite’ which would be an indication of booster:

/-n/ is an especially difficult case because it is also used in
SMG on certain occasions.

The number of remaining occurrences were written down for each item and aggregated to have the total number of boosters in each sub-corpus. The frequency counts were normalized at 1,000 words and compared in the two sub-corpora. After identifying the frequency of each of the hedging items in both sub-corpora, the items were categorized in six groups of *modals*, *verbs*, *nouns*, *adjectives*, *adverbs* and *others*.

In the next stage of the study, 10 qualitative and 10 quantitative RAs were selected randomly from among these 200 RAs to be studied in detail for the use of boosters in various moves and steps of these RAs (the particulars of the articles can be found in appendices B and C). To this end, first the selected Discussions were analyzed in terms of moves and steps (Swales, 1990). Then, the 202 hedging items used in the first part was search in each move of these two sets of articles using Find function of Microsoft Word. After identifying the cases, all of them were examined and double checked carefully to ensure that they all represented hedging feature. In the next stage,

the overall frequency of boosters in each move was counted manually and was normalized at 1,000 words.

3 Findings and Discussion

3.1 The overall distribution

The analysis of the 100 qualitative and 100 quantitative RAs' Discussion sections using WordPilot 2002 shows that boosters are an important element that are used by writers' of both types of RAs to interact with their audience (see Table 1). Writers use boosters to show their commitment to their achievement and gain credibility for them.

Table1. Overall Distribution of Boosters in 100 Qualitative and 100 Quantitative RAs' Discussion Sections

| Sub-corpus | Total No. of Boosters | Boosters Per 1,000 Words |
|------------------------------|-----------------------|--------------------------|
| Qualitative (132,271 words) | 1,232 | 9.31 |
| Quantitative (139,377 words) | 1,330 | 9.54 |

3.2 The distribution in various moves

The analysis of boosters in various moves of the 20 RAs showed a quite similar frequency in both types of RAs. Boosters were distributed almost equally in each common move of the qualitative and quantitative RAs (see Tables 2 and 3). Although boosters were present in most of the moves, they appeared with different frequency in various moves.

Table 2. Frequency and Percentage of Boosters in Each Move of the 10 Qualitative RAs' Discussion Sections

| Moves | Text Size | | Boosters | |
|------------------------------------|------------|---------------------------|------------------------|-----------------|
| | # of Words | % in the Whole Sub-corpus | Frequency & Percentage | Per 1,000 Words |
| - Providing Background Information | 418 | 4.50 | 0 (0.0%) | 0.0 |
| - Stating Findings | 2071 | 22.29 | 22 (40.76%) | 10.62 |
| - Providing Evidence for Findings | 1180 | 12.70 | 2 (5.56%) | 2.54 |
| - Commenting on Findings | 1803 | 19.41 | 10 (18.51%) | 5.55 |

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|---|--------------|------------|------------------|-------------|
| - Supporting Comments on Findings | 712 | 7.66 | 2 (3.70%) | 2.80 |
| - Comparing Findings with Literature | 809 | 8.71 | 6 (11.11%) | 7.41 |
| - Making Recommendations | 607 | 6.53 | 0 (0.00%) | 0.0 |
| - Making Deductions | 642 | 6.92 | 4 (7.40%) | 6.23 |
| - Supporting Deductions/ Suggestions | 63 | 0.68 | 0 (0.0%) | 0.0 |
| - Evaluating the Study | 725 | 7.80 | 6 (11.11%) | 8.27 |
| - Summarizing the Study | 260 | 2.80 | 1 (1.85%) | 3.85 |
| Total | 9,290 | 100 | 54 (100%) | 5.81 |

Table 3. Frequency and Percentage of Boosters in Each Move of the 10 Quantitative RAs' Discussion Sections

| Moves | Text Size | | Boosters | |
|--|---------------|---------------------------|------------------------|-----------------|
| | # of Words | % in the Whole Sub-corpus | Frequency & Percentage | Per 1,000 Words |
| - Providing Background Information | 589 | 5.27 | 2 (2.35%) | 3.39 |
| - Stating Findings | 2139 | 19.12 | 24 (28.24%) | 11.22 |
| - Commenting on Findings | 5077 | 45.40 | 33 (38.83%) | 6.50 |
| - Comparing Findings with Literature | 1115 | 9.97 | 13 (15.29%) | 11.66 |
| - Explaining Inconsistency of Findings with Literature | 152 | 1.36 | 0 (0.0%) | 0.0 |
| - Making Recommendations | 581 | 5.19 | 0 (0.0%) | 0.0 |
| - Making Deductions | 555 | 4.96 | 5 (5.88%) | 9.0 |
| - Supporting Deductions/ Suggestions | 229 | 2.05 | 0 (0.0%) | 0.0 |
| - Evaluating the Study | 576 | 5.15 | 7 (8.23%) | 12.15 |
| - Summarizing the Study | 171 | 1.53 | 1 (1.18%) | 7.85 |
| Total | 11,184 | 100 | 85(100%) | 7.69 |

Overall, boosters were more frequent in the three moves of Stating the Findings, Comparing Findings with Literature, and Evaluating the Study. The most widely used booster lexicon in both sub-corpora in Stating the Findings was the verb *show*. The verb was used mostly with reference to the findings to demonstrate that the proposition is drawn from the evidence and the writer is certain about the outcomes of the study. As Hyland (1998a, p. 370) also found in his corpus, in this context, the writers used boosters “to stress the strength of warrants, suggesting the efficacy of the relationship

between the data and claims". The other lexicons used as boosters in this move included *demonstrate*, *evidence*, *clearly*, and *particularly*. The following examples demonstrate the use of boosters in this move in the data:

- 1) Our analysis of NOM sessions also **showed clearly** that the teacher, although not the sole factor in improving stories, was a critical player. (Quali-TESOL3)
- 2) There was **evidence** that repeating a task with well-defined parameters and similar content (i.e. switching roles during a role play) increased the likelihood of its completion... (Quali-LTR1)
- 3) Means obtained for text comprehension **demonstrated** that participants **clearly** attempted to read the passage for meaning ($M = 13.24$ out of 15, with 7 as the lowest score). (Quali-TESOL2)
- 4) The results of the statistical analysis **clearly showed** that the PI made significant improvement (from pre-test to post-test) on the interpretation task. (Quali-LTR3)

As it was discussed in Chapters 4 and 5, the move of Evaluating the Study consists of two steps of Stating the Significance of the Study and Stating the Limitations of the Study. As it can be expected, the boosters appeared in the first step when the writers evaluated their studies positively and highlighted their importance and contribution to the field. The most common lexicon used in stating the significance was *evidence* which the writers used mostly to state that their studies have provided evidence for a knowledge claim. The following examples demonstrate the use of boosters in this move:

1. Our analysis therefore provides **evidence** for the claim by some recent educational discourse researchers that ... (Quali-APP1)
2. This study, combined with the research of Gibbs and colleagues (1997), and the eye-movement results from Underwood et al. (2004), provide converging **evidence** to support the processing advantage of formulaic sequences, at least when reading. (Quanti-APP1)
3. In addition, they add to the **evidence** provided by previous studies (Kasper, 1997; Murie & Thomson, 2001) that ... (Quali-ESP2)
4. The results obtained in the present study **confirm** the consistency and effectiveness of PI in improving learners' performance... (Quanti-LTR3)

The boosters were also common in Comparing Findings with Literature. They were mostly identified when the writers stated the consistency of their findings with literature. In this context, they mostly used boosters such as *show* and *found* to indicate their confidence in the studies in literature. However, boosters were also used in other contexts and in stating inconsistency of findings with literature as well. The following examples illustrate the use of boosters in this move:

- 1) Kasper (2004) has also **shown** how the definition of characteristics of task is procedurally consequential in ... (Quali-ESP2)
- 2) This view is supported by studies of oral CF. Carroll and Swain (1993) **found** that a group who received more explicit and informative CF (i.e., direct metalinguistic CF) outperformed groups who received other types of CF ... (Quanti-TESOL1)
- 3) Both Underwood et al. and this study **show** that nonnatives read formulaic sequences more quickly than equivalent non-formulaic language. Of course the reading speeds are slower than for natives, as one would expect, but even at this slower speed formulaic sequences **show** an advantage. (Quanti-APP3)
- 4) **In fact**, the over-explicitness during both early and later stages of second language acquisition is a common phenomenon, observed in many other L2 acquisition studies (Hendricks, 2003; Klein and Perdue, 1992; Williams, 1998). (Quanti-PRAG1)
- 5) According to Tomlin and Villa (1994), attention involves three subsystems- alertness, orientation, and direction- with detection as the most important function in attentional allocation' whereas alertness and orientation are not required for detection. As opposed to Tomlin and Villa, however, I would argue that both alertness and orientation are required for the detection of pragmalinguistic features. The current study **demonstrates** that motivation is related to learners' awareness of pragmalinguistic features. (Quanti-APP3)

The overall frequency of boosters identified in the corpus of this study is different from Hyland's (1999b, 2005c) who found 6.2 boosters per 1,000 words in Applied Linguistics RAs compared to 9.29 and 10.69 boosters per 1,000 words in this study in the qualitative and quantitative RAs respectively. The identified frequency of boosters in this study's corpus is close to Peacock's (2006) findings who identified 10.98 boosters per 1,000 in

Languages and Linguistics' RAs. The difference might be due to the number of boosters investigated in Hyland's compared to Peacock's and this study. Hyland did not specify the number and type of boosters he used in his analysis; Peacock used 118 lexical items; and 117 items were investigated in this study. The difference with Hyland's findings can also be attributed to various rhetorical sections of RAs investigated, as Hyland has studied the whole RA while this study only focused on Discussion section. This view is supported by Vassileva's (2001) finding which showed that boosters were more frequent in Discussion section of English Linguistics RAs compared to Introduction and Conclusion sections. However, it should also be noted that Peacock, whose findings are close to findings of this study, analyzed the whole RAs.

The other point that should be noted in this part is that after analyzing both sub-corpora, it was noticed that the words *significant* and *significantly* are overused in the quantitative sub-corpus. Checking the items in their co-context, it was noticed that the majority of the cases were used to show statistical differences between control and experimental groups or between pre-test and post-test results. In most cases, *significant* was collocated with words such as *difference(s)*, *correlation(s)*, *amount*, *degree*, and *gains*. The word *significantly* was also collocated with words such as *more*, *higher*, *better*, and *fewer*. These two words have specific meanings in statistics and were not used by writers to show their commitment to their conventions. The following examples illustrate the use of these words in such contexts:

- 1) There is a **significant** positive correlation ($r = 0.47$), between overall scores on the elicited imitation task and the oral narrative task.
- 2) Analysis confirmed that in both oral and written (language and geography essays) tests, there was no **significant** difference between the groups prior to the program.
- 3) Additional analysis was conducted to check whether there was a **significant** relationship between learners' appropriateness scores and their planning time.
- 4) The G only condition also produced **significantly** higher scores than the control condition, though not as high as those in the combined G + R condition.
- 5) Curiously, over time, CD occurrences in written performance increased **significantly** in the control group (which continued on its course of traditional language learning).

Therefore, all the cases that these two words were used in such contexts were not counted as boosters. To be specific, a total of 170 and 122

cases of *significant* and *significantly* which were respectively identified in the quantitative sub-corpus were not identified as booster and were excluded from the results. In other words, if those cases had been counted, the overall number of boosters would have risen to 1,797 items (12.89 boosters in 1,000 words).

3.3 Lexical means of expressing boosters

The analysis showed that the writers used various categories of boosters in their writings. The frequency of categories of boosters in the 200 RAs are shown in Table 4. As it can be seen in the table, the preference of various categories of boosters is similar in both sets of articles, except for *modals* which are slightly more frequent in the qualitative sub-corpus and *nouns* whose use is slightly higher in the quantitative articles. The two predominant categories in both sub-corpora are verbs and adverbs which comprise around 70% of the whole boosters in each sub-corpus. As the table indicates, three categories of *others*, *modals*, and *nouns* are the least frequent categories in both sets of articles. Vassileva's (2001) study also showed a more frequent use of adjectives/adverbs as boosters compared to modals in Linguistics RAs.

Table 4. Frequency of Categories of Boosters in 10 Qualitative and 10 Quantitative RAs' Discussion Sections

| Category | Qualitative: 132,271 | | Quantitative: 139,377 | |
|------------|------------------------------|--------------------|------------------------------|--------------------|
| | Frequency & Percentage | Per 1,000 words | Frequency & Percentage | Per 1,000 words |
| Verbs | 481 (39.04%) | 3.64 | 509 (38.27%) | 3.65 |
| Adverbs | 367 (29.79%) | 2.77 | 400 (30.07%) | 2.87 |
| Adjectives | 197 (15.99%) | 1.49 | 197 (14.81%) | 1.41 |
| Others | 70 (5.68%) | 0.53 | 93 (6.99%) | 0.66 |
| Modals | 65 (5.27%) | 0.49 | 58 (4.37%) | 0.41 |
| Nouns | 52 (4.22%) | 0.39 | 73 (5.49%) | 0.52 |
| Total | 1,232 (100%) | 9.31 | 1,330 (100%) | 9.54 |

3.3.1 Verbs

The most prevalent category in both sets of articles is verbs. All the verbs that had the same stem were combined in order to have a more precise idea about the occurrence of a specific verb. The predominant verb used in both sub-corpora was *show* (n=179 in Quali and n=206 in Quanti). The next two most occurred verbs were *found* (n=116 in Quali and n=150 in Quanti) and *demonstrate* (n=91 in Quali and n=55 in Quanti). The finding is consistent with Peacock's (2005) who found *show* as the most common booster in four

various disciplines including Languages and Linguistics. He also found *find* and *demonstrate* among the most dominant boosters in his corpus. The following are some examples of the use of this category in the 20 RAs:

- 1) The findings **showed** that learners with a high level of language analytic ability benefited more from both types of CF. (Quanti-TESOL1)
- 2) Although the same type of comment was **found** in the reports of the JNSG, it was more evident in the LJG. (Quali-PRAG2)
- 3) In particular, the shift in style and stance in Ben's embedded narratives **demonstrates** his ability to adopt a range of narrative voices. (Quali-ESP1)

3.3.2 Adverbs

The second most common category of boosters in both sub-corpora was *adverbs*. Among the adverbs, several were more common than others including *clearly* (n=57 in Quali and n=55 in Quanti), *particularly* (n=54 in Quali and n=49 in Quanti), *indeed* (n=37 in Quali and n=50 in Quanti), *in fact* (n=32 in Quali and n=41 in Quanti), and *highly* (n=26 in Quali and n=26 in Quanti). The findings are similar to Peacock's (2005) findings who found all these adverbs among the most frequent adverbial boosters in Applied Linguistics. Vassileva (2001) also found *clearly* as the most widespread adverbial booster in Linguistics RAs. Bondi (2008) analyzing adverbial emphatics, found *clearly* and *particularly* among highly used adverbs in History and Economics RAs. The other more frequently used adverbs in the corpus were *actually*, *always*, and *highly*. The following examples show the use of adverbial boosters in the 20 RAs:

- 1) Our analysis of NOM sessions also showed **clearly** that the teacher, although not the sole factor in improving stories, was a critical player. (Quali-TESOL3)
- 2) This may be **particularly** important for adult learners with a great deal of experience of the world to draw on and a great interest in the social and cultural issues affecting themselves and the people who speak their target language. (Quali-LTR2)
- 3) Also, it can be considered to meet the regularity criterion in that the rule determining which auxiliary to choose is **highly** reliable. (Quanti-APP2)

3.3.3 Adjectives

The third most dominant category of boosters in both sub-corpora was *adjectives* (n=197 in Quali and n=203 in Quanti). The most frequent lexicons in this category were *clear* (n=30 in Quali and n=35 in Quanti), *evident* (n=28 in Quali and n=17 in Quanti), *apparent* (n=17 in Quali and n=20 in Quanti), and *true* (n=16 in Quali and n=17 in Quanti). In Peacock's analysis of 30 Languages and Linguistics RAs, two adjectives of *clear* and *apparent* were found among the most frequent adjectives in the corpus. The following examples illustrate the use of adjectives as boosters in the 20 RAs:

- 1) At one level, such a claim is **obvious**; however, current models of teaching and learning rarely acknowledge this important fact. (Quali-TESOL3)
- 2) They show that a single WCF treatment is effective in helping learners improve the accuracy of their writing and that the benefits accrued from this input are not only retained over time but also **evident** in new pieces of writing. (Quanti-LTR2)
- 3) It is **clear**, then, that being an easy to 'grasp' feature does not guarantee its accurate use as implicit knowledge. (Quanti-APP2)

3.3.4 Others

The category of *others* which comprised around 6% of the boosters in each sub-corpus included the instances such as *idioms*, *pronouns*, *conjunctions*, and *prepositions* that did not fall under the other categories. Only three lexicons were identified in this category: *the fact that* (n=49 in Quali and n=75 in Quanti), *of course* (n=18 in Quali and n=18 in Quanti), and *no doubt* (n=4 in Quali and n=0 in Quanti). The following examples from the 200 RAs illustrate the use of this category in the corpus:

1. This is supported by **the fact that** when referring to some other referent entitled to be called my lord, writers almost always use an additional "reference-specifier", as in my Lord Coke, my Lord Treasurer, my Lord of Oxford and my Lord his Grace of Canterbury. (Quali.)
2. The findings presented above are **of course** not conclusive, given the limited coverage and number of texts considered. (Quali.)

3. There is the possibility, **of course**, that some non-CLT elements may be at odds with, opposed to, or inimical to CLT approaches. (Quanti.)

3.3.5 Modals

The category of *modals* was another infrequent group in both sets of articles; however, it was slightly more frequent in the qualitative articles. Three modal verbs were identified as boosters in the corpus: *must* (n=47 in Quali and n=29 in Quanti), *do* (when was followed by an infinitive verb) (n=9 in Quali and n=17 in Quanti), and *does* (when was followed by an infinitive verb) (n=9 in Quali and n=12 in Quanti). The modals were identified 48 and 29 times in the qualitative and quantitative sub-corpora respectively. Peacock (2005) identified *must* among the top five most frequent boosters in 30 Languages and Linguistics RAs. Although the category of *modals* was infrequent in the corpus of this study, *must*, being among the 10 most frequent boosters, was a frequent lexicon in the corpus. Peacock's results showed a frequency of 0.30 occurrences per 1,000 for this lexicon which is close to 0.36 and 0.30 per 1,000 words in the qualitative and quantitative sub-corpora of this study respectively. The following examples from the 20 RAs illustrate the use of these modals:

1. Not only **must** the story itself provide enough plot to elicit interest and wonderment from ..., but the storyteller **must** also actively respond to ... (Quali-TESOL3)
2. As the study illustrates, while some of the published texts **do** follow a deductive pattern, others do not. (Quali-ESP3)
3. Dative alternation **does** permit a reasonably transparent rule ... (Quanti-APP1)

3.3.6 Nouns

The last category of boosters was *nouns* which was infrequent in both sub-corpora and comprised less than 5% and 6% of the boosters in the qualitative and quantitative sub-corpus respectively. The only *noun* that was found in the corpus as a booster was *evidence* which appeared 52 and 73 times in the qualitative and quantitative sub-corpus respectively. The word was not included in Peacock's list, however, other studies (e.g. Hyland, 2005a) have included it in their analysis. Although *nouns* were among the least frequent categories in the corpus, *evidence* was one of the most frequent boosters used in the corpus. The below examples show the use of *evidence* in the 20 RAs:

1. Instances of preliminary or warm up talk like these thus provide **evidence** that the participants themselves categorized their previous talk as ‘transitional first’ or as ‘false first’ topic talk. (Quali-APP1)
2. This study, combined with the research of Gibbs and colleagues (1997), and the eye-movement results from Underwood et al. (2004), provide converging **evidence** to support the processing advantage of formulaic sequences, at least when reading. (Quanti-APP1)

4 Conclusion

To summarize, the findings indicate that boosters are a common feature that the writers of both sets of articles use to interact with their audience. In terms of frequency, the analysis did not show much difference in both sub-corpora. The two moves that were identified with higher number of boosters were Stating Findings and Evaluating the Study (step1: Stating the Significance of their Study). The finding is expected because in these two moves the writers present new knowledge claims and the importance and contribution of their study to the field and consequently tend to show their confidence in what they state and emphasize the points that they want to be highlighted in order to gain readers’ acceptance of them. Categorization of boosters showed that the two categories of verbs and adverbs were the most common devices used as boosters in both sub-corpora. Both groups of writers favored the categories similarly, except for modals which were identified slightly higher in the qualitative articles and nouns which were slightly higher in the quantitative articles. Both sets of articles were also similar in their choices of lexicons from each category, and the most frequent lexicons in each category were the same in both sets of articles. Overall, the five most frequent lexicons used as boosters were *show*, *find*, *demonstrate*, *evidence*, and *clearly*.

The findings reinforced previous studies that academic writing is not merely presenting facts objectively. Contrary to the assumption that qualitative research is more subjective and quantitative research is more objective and impersonal because of the use of numbers and statistics, the findings revealed that both types of article writers take a stance in their texts. In reporting every piece of research, there is always a possibility that the reader refutes the writers’ claims as he/she does not find them convincing. Thus, the main aim of a research article is to persuade the reader to accept the findings and claims of the writer so that “the article becomes an integrated part of a particular field’s literature and thus of the field’s deliberation” (Fløttum, 2007, p. 5). Interacting and negotiating with their audience and taking stance towards their own work and those in literature is one of the ways writers can persuade their audience that they are “competent disciplinary insider” and their work is worthy of attention (Hyland, 2005c, p.

175). Discussion sections are arguably the most important section of a RA as they have a crucial role in establishing the importance of research and persuading readers. In order to communicate effectively with their discourse community and persuade their audience that a study is worthy of attention, writers need to get familiar with the norms and conventions of their discipline and the ways of negotiating with their readers. Boosters are one of these conventions that writers need to master using them.

One of the strengths of this study is that it combines both corpus and genre analysis. While corpus analysis gave general information about the overall frequency of boosters in the qualitative and quantitative sub-corpora, it was unable to provide information about in which parts of RAs these features were clustered in. Conducting genre analysis and studying boosters in each Move provided extra insights about their use in these two types of RAs. It is hoped that the findings of this study contribute to better understanding of the genre of RA in Applied Linguistics. While senior members of a discourse community have implicit knowledge of the norms and conventions of the genres of their community, introducing this knowledge explicitly to newcomers can empower them and facilitate their entry to the community.

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Appendix

A. Summary of Corpus Used in Examining the Boosters Using WordPilot 2002

| Journals | Qualitative | | Quantitative | |
|-------------------------------|-------------|--------------------------|--------------|--------------------------|
| | # of texts | Size of texts (in words) | # of texts | Size of texts (in words) |
| Applied Linguistics | 13 | 16,188 | 14 | 21,750 |
| English for Specific Purposes | 19 | 22,148 | 7 | 7,435 |
| Language Teaching Research | 10 | 11,324 | 32 | 39,875 |
| Journal of Pragmatics | 33 | 54,509 | 17 | 30,732 |
| TESOL Quarterly | 25 | 28,102 | 30 | 39,585 |
| Total | 100 | 132,271 | 100 | 139,377 |

Note: size of texts do not include footnotes, figures, tables and direct quotations

B. List of the Qualitative Research Articles

- 1) (Quali-APP1)
Gan, Z., Davison, C., Hamp-Lyons, L. (2009). Topic negotiation in peer group oral assessment situations: A conversation analytic approach. *Applied linguistics*, 30(3), 315-334.
- 2) (Quali-APP2)
Flowerdew, J., Li, Y. (2007). Language Re-use among Chinese Apprentice Scientists Writing for Publication. *Applied linguistics*, 28(3), 440-465.
- 3) (Quali-ESP1)
Morton, J. (2009). Genre and disciplinary competence: A case study of contextualisation in an academic speech genre. *English for Specific Purposes*, 28, 217-229.
- 4) (Quali-ESP2)
Cheng, A. (2007). Transferring generic features and recontextualizing genre awareness: Understanding writing performance in the ESP genre-based literacy framework. *English for Specific Purposes*, 26, 287-307.
- 5) (Quali-ESP3)
Shi, L., Kubota, R. (2007). Patterns of rhetorical organization in Canadian and American language arts textbooks: An exploratory study. *English for Specific Purposes*, 26, 180-202.
- 6) (Quali-PRAG2)

Ishida, I. (2006). Learners' perception and interpretation of contextualization cues in spontaneous Japanese conversation: Back-channel cue Uun. *Journal of Pragmatics*, 38, 1943-1981.

7) (Quali-LTR1)

Springer, S., Collins, L. (2008). Interacting inside and outside of the language classroom. *Language Teaching Research*, 12(1), 39-60.

8) (Quali-LTR2)

Murphy, L. (2005). Attending to form and meaning: The experience of adult distance learners of French, German and Spanish. *Language Teaching Research*, 9(3), 295-317.

9) (Quali-TESOL1)

Higgins, C. (2003). "Ownership" of English in the outer circle: An alternative to the NS-NNS dichotomy. *TESOL Quarterly*, 37(4), 615-644.

10) (Quali-TESOL3)

Ko, J., Schallert, D. L., Walters, K. (2003). Rethinking Scaffolding: Examining Negotiation of Meaning in an ESL Storytelling Task. *TESOL Quarterly*, 37(2), 303-324.

C. List of the Quantitative Research Articles

1) (Quanti-APP1)

Conklin, K. & Schmitt, N. (2008). Formulaic sequences: Are they processed more quickly than nonformulaic language by native and nonnative speakers? *Applied linguistics*, 29(1), 72-89.

2) (Quanti-APP2)

Ellis, R. (2006). Modelling learning difficulty and second language proficiency: The differential contributions of implicit and explicit knowledge. *Applied linguistics*, 27(3), 431-463.

3) (Quanti-APP3)

Takahashi, S. (2005). Pragmalinguistic awareness: Is it related to motivation and proficiency? *Applied linguistics*, 26(1), 90-120.

4) (Quanti-ESP2)

Song, B. (2006). Content-based ESL instruction: Long-term effects and outcomes. *English for Specific Purposes*, 25, 406-437.

5) (Quanti-PRAG1)

Kang, J. Y. (2004). Telling a coherent story in a foreign language: Analysis of Korean EFL learners' referential strategies in oral narrative discourse. *Journal of Pragmatics*, 36, 1975-1990.

6) (Quanti-PRAG3)

Adenzato, M. & Bucciarelli, M. (2008). Recognition of mistakes and deceptions in communicative interactions. *Journal of Pragmatics*, 40, 608-629.

7) (Quanti-LTR2)

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Qualitative and Quantitative Research Articles

Bitchener, J. & Knoch, U. (2008). The value of written corrective feedback for migrant and international students. *Language Teaching Research*, 12(3), 409-431.

8) (Quanti-LTR3)

Benati, A. (2005). The effects of processing instruction, traditional instruction and meaning-output instruction on the acquisition of the English past simple tense. *Language Teaching Research*, 9(1), 67-93.

9) (Quanti-TESOL1)

Sheen, Y. (2007). The effect of focused written corrective feedback and language aptitude on ESL learners' acquisition of articles. *TESOL Quarterly*, 41(2), 255-283.

10) (Quanti-TESOL2)

Barcroft, J. (2009). Effects of synonym generation on incidental and intentional L2 vocabulary learning during reading. *TESOL Quarterly*, 43(1), 79-103.