INTRODUCTION

The traditional view that research article (henceforth RA), being a prototypical instance of academic discourse (Suomela-Salmi & Dervin, 2009), constitutes a predominantly objective, faceless, depersonalized representation of reality (Mauranen & Bondi, 2003) has continuously lost ground. Increasingly, it is widely argued that research writing is a form of social practice, and that it involves not only representation of the world, but also construction of interpersonality in an attempt to persuade readers of the veracity of the claims presented (Hyland, 2014; Martín & Pérez, 2014; Mur-Dueñas, 2007; Salas, 2015). Indeed, the interpersonal (i.e. dialogic) ingredient of academic texts has been considered more salient than their representational aspect (Biber, 2006). This is tantamount to saying that persuasive argument plays a significant role in the creation of knowledge in the RA (Hyland & Salager-Meyer, 2008). Rhetorical persuasion is achieved through a wide range of linguistic devices, one of which is boosters (Gillaerts & Van de Velde, 2010).

Boosters are expressions, such as certainly, of course, used by writers to mark full commitment to their proposition (Hyland, 2009). They belong to the interpersonal dimension of language (Halliday & Matthiessen, 2014), and are deployed by writers to indicate their presence trying to intrude into the text in an attempt to lead readers to a particular line of argumentation, that is, to influence their judgment. As a stance marking device, boosting has a pivotal role in written academic discourse (Gray & Biber, 2012). The interactive function of boosters lies in the fact that they are often used to stress shared information and group membership (Hyland, 2009). The persuasive power of a writer’s ideas comes from the fact that they are widely accepted within the intended community of scholars.

Compared to the use of other rhetorical devices, the use of boosters in RAs has not been extensively studied whether through cross-cultural comparison or through cross-disciplinary comparison. Cross-cultural studies compared the use of boosters in RAs written in English and those written in other languages such as Spanish (Mur-Dueñas, 2011), Chinese (Hu & Cao, 2011; Kim & Lim, 2013). In cross-disciplinary studies, RAs from different disciplines written in English were compared (Diani, 2008;
The cross-cultural studies showed that scholars from cultures other than English made categorical statements more frequently compared to their counterparts from Anglophone English culture. The findings from the cross-disciplinary studies, by contrast, yielded inconsistent patterns; while Hyland (2008) found that disciplines belonging to natural sciences used more boosters than those within the social science domain, Peacock (2006) discovered that some of the disciplines from the natural science domain used more boosters than disciplines from social science domain. These inconsistent results justify the need for further studies. Although thus far the cross-cultural studies produced seemingly uniform results, the paucity of the studies in such area prevent us to reach a firm conclusion, partly due to the fact that the cultures represented in those studies are still very limited.

The present corpus-based study tries to contribute to the area of the use of boosters in RAs. It specifically examines the effect of sociocultural context and discipline on the use of boosters in RAs written in English and Indonesian by the respective native-speaker scholars from the disciplines of chemistry and applied linguistics. From this idea, the thought that questions whether or not sociocultural context and discipline have any influence on the frequency of use of boosters in RAs.

Following the practice of previous research, in the present study the notion ‘sociocultural context’ simply refers to cultural affiliation of the RA writers. Disciplines can be differentiated in terms epistemic and social relations (i.e. principles of legitimation), with hard sciences (e.g. chemistry) having stronger epistemic relation and weaker social relation, while soft sciences (applied linguistics) stronger social relation and weaker epistemic relation (Hood, 2011). The present study was also geared toward examining the extent to which such differential underlying principles of legitimation spill over into their rhetorical characteristics.

The theoretical significance of the present study lies in its contribution to further our understanding of boosting practices in RAs. It has been mentioned in the passing above that deployment of boosters in RAs is an uncharted research area in the field of applied linguistics. Studies conducted on English academic writing have generally been used to generate a general theory of academic writing, that is, the theory presumed to hold true not only for English academic writing, but for academic writing in other languages as well. The availability of research findings on academic writing in languages other than English will serve as a test case for the existing theory (i.e. the theory generated from research findings into English academic writing). The practical significance of the present study concerns the benefit accrued by Indonesian scholars who wish to publish in international journals. The availability of information about the rhetorical similarities and differences between English and Indonesian research articles enables the EAP practitioners in Indonesia to raise the scholars’ awareness of what makes rhetorical practices acceptable in the RAs written in the two languages.

METHODS

The specialized corpus for the present study was built from 104 RAs published from 2007 to 2010, 26 from English applied linguistics, 26 from Indonesian applied linguistics, 26 from English chemistry, and 26 from Indonesian chemistry. Given the pervasive use of boosters in RAs across disciplinary fields (Peacock, 2006), a corpus of the above-mentioned size can offer a ‘balanced’ and ‘representative’ picture of the specific area under investigation in the present study, the most important requirement in the creation of a specialized written corpus.

The English RAs were published in international journals, while the Indonesian RAs were published in journals for Indonesian readership. To ensure the representativeness of the corpora, a probabilistic sample was drawn using simple random sampling technique from the collection of all RAs published during the four-year period. The corpus was generated from the following parts of the RAs: Introduction, Literature Review, Results, Discussion, and Conclusion.

The size of the entire corpus was 407,848 words. The means (M) and standard deviations (SD) of the lengths of the RAs in the four sub-corpora were as follows: English applied linguistics (M = 6,820,08; SD = 1,070,53), Indonesian applied linguistics (M = 4,047,92; SD = 1,105,29), English chemistry (M = 3,495,31; SD = 1,367,73), Indonesian chemistry (M = 1,323,15; SD = 461,33).

The determination of a linguistic device as a potential boosting device was entirely based on its semantic and pragmatic content, as the same lexical item (e.g. show) can function as a booster in one context (e.g. the findings show that...), but not in another (e.g. Table 1 shows the descriptive statistics of...). A combination of manual and computer-based searches was employed to identify the linguistic devices under study. First, seven RAs randomly selected from each of the sub-corpora (English applied linguistics, Indonesian applied linguistics, English chemistry, and Indonesian chemistry) were thoroughly read to identify boosters. Such thorough reading of the 28 RAs resulted in four independent lists of boosters subsequently used as the basis for the computer-based search in the rest of the RAs. This search was done with the help of the Advanced Search function available in the Adobe Acrobat Professional XI program.

The analysis was conducted on the normalized (per 1,000 words), rather than absolute or raw, occurrences of boosters in the RAs. Normalization of counts refers to a way to convert raw counts into rates of occurrence, so that the scores from texts of different lengths can be compared (Biber, 2009). The normalization of the frequency of boosters in a text was done by dividing the total number of boosters found in the text by the total number of words and then multiplied by one hundred.

To answer the research question, two-way factorial Analysis of Variance (ANOVA) was conducted on the data. Subsequent simple effects analysis was also conducted to look at the effect of one independent variable on each level of the other independent variable, for example to see whether discipline had any effect on the English RAs (Field, 2013). All statistical analyses were conducted using the computer software Statistical Package for Social Sciences (SPSS) version 20.

RESULTS AND DISCUSSIONS

Table 1 presents the descriptive statistics of the use of boosters in the four groups of RAs. It is immediately apparent from the above table that Indonesian applied linguists used boosters in their RAs most frequently, while English chemists made use of the devices least frequently.
By contrast, the former group was the least homogeneous group in terms of frequency of use of boosters, as indicated by the size of the standard deviation. It has to be mentioned that the two maximum figures in the Indonesian sub-corpora were outliers.

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As shown in Table 2 (The results of the 2 x 2 Factorial ANOVA conducted on the data), there was a significant main effect of sociocultural context on the use of boosters in RAs: Indonesian RAs contained significantly higher number of boosters than English RAs. The partial eta squared of 0,307 indicated that the variable sociocultural context accounted for 31% of the total variation in the use of boosters in RAs. There was also a significant main effect of discipline, with applied linguistics RAs deploying significantly more boosters than chemistry RAs. The variable discipline accounted for 16% of the total variation in the use of boosters. Finally, there was a significant interaction effect between the two variables on the use of boosters, although the magnitude of the effect was quite negligible (0,06%).

As can be seen from Figure 1 below, the mean difference between applied linguistics and chemistry found in English RAs was much smaller than that found in the Indonesian RAs. It was also evident that the mean difference between English and Indonesian RAs in chemistry was much smaller than that in applied linguistics. This strongly indicated that although discipline and sociocultural context influenced the use of boosters in RAs the influence of one variable was affected by the other. Table 2 above also shows that the factorial model for the present study accounted for 39% of the total variation in the use of boosters in RAs. This indicated that 61% of the total variation was accounted for by other unknown variables.

Subsequent simple effects analysis was also conducted to examine the effect of (1) sociocultural context within each discipline and (2) discipline within each sociocultural context. The results revealed that there was a significant effect of sociocultural context within both applied linguistics and chemistry, suggesting that the sociocultural context within which researchers published their research affected their frequency of use of boosters in their RAs; Indonesian researchers in both disciplines used significantly more boosters than their English counterparts (see Table 1). However, the effect of discipline was evident only within the Indonesian sociocultural context, suggesting that disciplinary context was not a robust factor determining researchers’ use of boosters; Indonesian applied linguists significantly used more boosters than Indonesian chemists.

| Table 1 Descriptive Statistics for the Four Sub-Corpora |
|---------------------------------|----------------|----------------|----------------|
|                                 | English        | Indonesian     |                |
| Mean                            | 3.78           | 2.70           | 9.54           | 5.20           |
| Std. Deviation                  | 1.47           | 1.70           | 4.75           | 3.50           |
| Minimum                         | 1.20           | 0.42           | 1.59           | 0.69           |
| Maximum                         | 6.86           | 7.86           | 21.11          | 15.72          |

| Table 2 Tests of Between-Subjects Effects |
|---------------------------------|----------------|
| Source                          | Type II Sum of Squares |
|                                 | df | Mean Square | F | Sig. | Partial Eta Squared | Observed Power |
| Corrected Model                 | 702,588 | 3 | 234,196 | 23,466 | 0.000 | 0,413 | 1,000 |
| Intercept                       | 2927,193 | 1 | 2927,193 | 293,293 | 0.000 | 0,746 | 1,000 |
| Sociocultural Context           | 442,530 | 1 | 442,530 | 44,340 | 0.000 | 0,307 | 1,000 |
| Discipline                      | 191,191 | 1 | 191,191 | 19,157 | 0.000 | 0,161 | 0,991 |
| Soc. Cont.*Discipline           | 68,868 | 1 | 68,868 | 6,900 | 0.010 | 0,065 | 0,739 |
| Error                           | 998,044 | 100 | 9,980 |
| Total                           | 4627,825 | 104 |
| Corrected Total                 | 1700,632 | 103 |

a. R Squared = 0.413 (Adjusted R Squared = 0.39)
b. Computed using alpha = 0.05
The present corpus-based study was carried out to investigate the effects of two factors on the use of boosters in RAs, namely the sociocultural context in which the RAs were written and the discipline from which they were drawn. The results showed that sociocultural context significantly influenced the use of such rhetorical feature: RAs written by Indonesian academics were more assertive than those written by English academics. However, the results regarding the effects of discipline were mixed.

The finding of the present study was consistent with that of previous studies. Hu and Cao (2011), for example, reported a study that showed that applied linguistics RA abstracts written in Chinese made use of boosters significantly more frequently than those written in English.

The finding of the present study (along with the findings of other studies mentioned above) that English RAs were less assertive than RAs written in Indonesian corroborated Hyland’s (2011) conjecture that academic writing in English tends to be more cautious in making claims compared with many languages. However, this does not necessarily mean that all English academic writers are more cautious in making claims compared with writers of other languages. The findings of the present study showed that although on average English writers made more tentative claims than their Indonesian colleagues, some Indonesian writers were in fact making more tentative claims than English writers.

The intriguing question now is why Indonesian scholars (at least from the two disciplines under study) were more confident in presenting their claims than their English counterparts. To answer this question, it will be argued that three aspects of sociocultural context could be evoked as the explanation: size of the expected readership, degree of homogeneity of the expected readership, and cultural as well as socioeconomic characteristics of the contexts in which the two groups of writers operate. Such explanations are conceptually consistent with the widely-held view of genre as a situated entity (Tardy, 2011).

On the assumption that all other things are equal between English and Indonesian scholars, the two groups of scholars were in fact different in one obvious aspect, namely the characteristic of the readership being addressed. More particularly, the sizes of the scholarly community being addressed by the two groups of scholars were obviously different. Indonesian scholars (using Indonesian publishing in local journals) communicated their research findings with their fellow Indonesian academics only, while English scholars (by virtue of the international status of the journals in which they published) had to address a much wider academic community. It could be argued that the smaller the size of the community, the better the members know each other, which in turn leads to stronger solidarity among the members in question. Recall that boosters are markers of solidarity. For Indonesian scholars, expressing scientific claims with great certainty could be considered as a safe rhetorical behavior. For English scholars, however, displaying such rhetorical behavior might well be at risk, as much more scholars were involved in the scientific communication. Assuming solidarity on the part of the English scholars was simply not possible, accordingly. Therefore, for English scholars avoiding conviction in their claims might be the right rhetorical choice in an attempt to minimize the potential rejection of their claims (or even worse, rejection of their paper by the journal reviewers). Thus, there might be a negative correlation between the frequency of use of boosters and size of intended readership. That is to say, the greater the size of the intended readership the smaller the frequency of use of boosters would be, and vice versa.

From the explanation above, it might also be argued that the finding that Indonesian scholars were more assertive and/or more confident in their claim presentation than their English colleagues might be triggered by the differing degrees of homogeneity of the intended readership (i.e. Indonesian readership versus international readership). Due to much smaller size of the Indonesian scholarly community in the two disciplines, Indonesian scholars might characteristically assume that the community was homogeneous with regard to the viewpoints being promoted. That is, they might assume that their viewpoint and their readership’s concurred to a great extent, and this assumption on their part provoked frequent use of boosters in their research articles. For international scholarly community, given its much larger size, such homogeneity could not safely be assumed by English scholars and, for this reason (among other reasons), English scholars might think that the safe way to go was to present the claims without conviction. English and Indonesian scholars can also unambiguously be distinguished from each other in terms of the characteristics of sociocultural contexts in which they write their research. English and Indonesian sociocultural contexts are significantly different from each other in at least two respects: power distance and individualism versus collectivism. The power distance index of Indonesian sociocultural context is much larger than that of English sociocultural context (Hofstede et al., 2010). This means that, in comparison with members of English society, members of Indonesian society much more readily accept and expect that power should be distributed unequally. Such sociocultural difference seems to spill over into the rhetorical features of RAs in both societies. Within Indonesian society RA writers (university teachers and researchers) are typically considered as experts in their field, and their authority is not supposed to be questioned, as indicated by the scarcity of critical remarks in Indonesian RAs (Adnan, 2008). As far as Indonesian RA writing is concerned, therefore, there seems to be a tacit agreement that power should be distributed unequally between the writer and putative readers, whereby the latter are positioned in the less powerful position. The fact that the writer is entitled to stronger position might lead
to his or her being overly confident in making statements. This might have triggered the heavy use of boosters in Indonesian RAs. Although English RA writers are also considered as experts in their field, they do not seem to enjoy the same degree of authority as their Indonesian colleagues do. If people read the Introduction section of any English RA, they will immediately come across with abundant negative remarks, for example flawed method in previous research, limited scope of previous research, and the like. Such negative remarks are usually made to create a research niche. This all boils down to the egalitarian nature of English sociocultural context. Within the context of English RA writing, the agreement seems to be that power should be equally distributed between the RA writer and putative readers. The perceived absence of absolute authority on the part of the RA writer might have triggered the infrequent use of boosters in English RA; over confidence on the part of the writer in the truth value of propositions is simply not possible and/or inappropriate in English sociocultural context.

Another cultural dimension along which English and Indonesian sociocultural contexts differ from each other is individualism and collectivism. While English society is individualist, Indonesian society is collectivist (Hofstede et al., 2010). In a collectivist society the voice of an RA writer is regarded as representing the voice of the group. To put it in slightly different terms, the writer’s voice constitutes a shared voice. Boosters are rhetorical devices used to “stress shared information and group membership” (Hyland, 2009). This explains the abundance of boosters used in Indonesian RAs. In an individualist society, by contrast, due to the expectation that everyone has a private idea, an RA writer could not reasonably assume that his or her voice is a shared one within the group. Consequently, a confident or assertive claim almost does not have a place in RAs produced in (and for) such a society. This characteristic might trigger the avoidance of boosters in English RAs. In sum, the differential rhetorical practices evident in English and Indonesian RAs might have something to do with the difference between English and Indonesian societies along the cultural dimension of individualism versus collectivism.

Another finding of the present study is that discipline does not have equal influence on the use of boosters in RAs in both sociocultural contexts. Boosters constitute one of metadiscursive features that are reflexive in nature (i.e. they convey interpersonal, rather than ideational, meaning). Therefore, boosting practices can reflect the ethos of the discipline. The results of the present study, provide empirical evidence in support of this view. The between-discipline (where the two sociocultural contexts were combined) finding that boosters are significantly more frequent in applied linguistics than in chemistry suggests that the role that argument plays in the advancement of knowledge in the former discipline is greater than that in the latter one. In other words, applied linguistics is apparently more discursive (argumentative) than chemistry. However, the within-sociocultural context analysis in the present study produced conflicting findings that can undermine the validity of the above-mentioned view: while there was a statistically significant difference in the frequency of use of boosters between the two disciplines in the Indonesian sub-corpus, the two disciplines from the English sub-corpus were not significantly different from each other. This strongly suggests that, as far as English RAs are concerned, boosting practices does not seem to reflect the ethos of the discipline. Another interpretation is that discipline might not be a strong indicator influencing the use of boosters in all sociocultural contexts. That is to say, the effect of discipline on the use of boosters in RAs might be offset by the effect of the sociocultural context in which the RAs are written (see the effect sizes of the two variables in Table 2).

One final remark that should be made regarding the effects of the two variables is that boosting practices in RAs might not be predominantly determined by the two factors. Notice that the effect size for the statistical model (i.e. the combined effects of the two variables under study) was 0.39. Apparently, there exist other factors accounting for 61% of the variation in boosting usage in RAs.

CONCLUSIONS

The findings of the present comparative study confirm the view that academic research writing is not a standalone entity operating independent of cultural forces surrounding it. Rather, academic writing is prone to vary according to the cultures to which the writers gain membership. Writers can belong to two quite different cultures, namely large (national) and small (discipline) cultures. In the present study, the small culture was not found to be a strong factor influencing writers’ boosting practices, a finding that plainly contradicts the widely held view that rhetorical features of RAs are profoundly determined by the disciplinary culture with which the writers are affiliated. It could be argued that discipline might not have equal influences on different rhetorical features.

One of the obvious limitations of the present study is concerned with the limited number of disciplines included in the corpus. This might explain the inconclusive nature of the findings regarding the effect of discipline on boosting practices. Therefore, future studies might need to include greater number of disciplines from each of the following knowledge domains: theoretical hard knowledge domain (e.g. physics), theoretical soft knowledge domain (e.g. sociology), applied hard knowledge domain (e.g. engineering), and applied soft knowledge domain (e.g. language teaching). Future studies might also need to include in their corpus RAs written by non-native speaker scholars. The findings of such studies would validate the extent to which rhetorical behavior is determined by size and degree of homogeneity of readership. It would be interesting to see whether rhetorical behavior of, for instance, Indonesian scholars varies as a function of characteristics of readership being addressed.

The practical (i.e. pedagogical) implication of the present study should be apparent by now. On the assumption that RA writers will unconsciously deploy their first language rhetorical style when they write their research in a language other than their native one (Zégarac & Pennington, 2008), it seems reasonable to argue that Indonesian RA writers may use their Indonesian rhetorical pattern when they report their research in English for international publication. With that being said, English RAs written by Indonesian native speaker scholars would unnecessarily be overly assertive. Recall that Indonesian RAs analyzed in the present study were overly assertive (contained unusually frequent boosters). Pragmatically speaking, such rhetorical behavior might be considered as culturally inappropriate for scholarship dominated by egalitarian cultural value. This would lead to the rejection of the claims presented, or rejection of the paper submitted for publication. This means that Indonesian scholars who wish to publish their research
in international journals might need some instruction specifically designed to cater to their needs, that is, how to present their claims suitable for international publication.

REFERENCES


