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POLITENESS STRATEGIES IN RESEARCH ARTICLES: A CROSS-DISCIPLINARY STUDY

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Abstract

This corpus-based study investigates cross-disciplinary differences in the use of politeness strategies in research articles (RAs). The corpus consists of thirty-six RAs from applied linguistics, educational technology, and economics journals published in the year 2009. The data were statistically analyzed. Findings indicate that in academic/ research writing, writers employed both positive and negative politeness strategies when expressing opinions but the negative politeness strategies, especially impersonality devices and hedges, were the most frequently used by writers of RAs in the three disciplines. The use of impersonality and the use of hedging devices play a vital part in RAs especially in the Introduction, Results, and Discussion sections where writers mitigate the imposition and reduce their commitment to the truth of their claims. With regard to cross-disciplinary differences, differences were found only in the use of positive politeness strategies. The first strategy "claiming common grounds" was used most often in Economics and least often in Technology. With reference to the second strategy "the use of the inclusive pronoun "we" and its related cases", significant differences were found across the three disciplines. The use of

this strategy was more frequent in Applied Linguistics than in Economics or Technology.

Keywords: Academic writing; Cross-disciplines; Politeness; Research article; Research writing

Introduction

The purpose of a research article (RA) is to present the results of a study and to make claims or contradict previous theories or beliefs. Criticizing or questioning empirical evidence or existing theories may be interpreted as impolite if not expressed in an acceptable manner. Such statements can intimidate face-images or can be seen as face-threatening acts (Brown & Levinson, 1978, 1987). Moreover, Grice (1975) in explaining his Cooperative Principle points out that successful communication depends not only on what is expressed but also how politely it is expressed. Unless the reader and the writer are willing to accept mutual differences; defensiveness, criticism or conflict may arise during the reading/writing processes. When making claims, criticizing, speculating or asserting empirical evidence, writers should use politeness strategies to show that they are aware of different status and roles. Furthermore, Hyland (1999) states that there is often more than one interpretation for a given piece of data. Therefore, research writers should employ politeness strategies when making their claims since any statement the writers claim to be true requires the ratification of the readers. In other words, to gain acceptance from authorities in their field, writers should use several strategies aimed at persuading the authority of the truth of their claims.

Over recent decades, concern about the use of politeness strategies in scientific writing has increased. Several studies have been conducted to investigate politeness strategies used by research writers when presenting factual information along with writers' personal opinions and when interacting with readers (Getkham, 2011; Gil-Salom & Soler-Monreal, 2009; Harwood, 2005; Hunston,

1994; Hyland, 2001; Myers, 1989, 1992; Skelton, 1997; Walko, 2007). Studies collected data from hard science included Burrough-Boenish (2005), Falahati (2009), Li and Gi (2009), Salager-Meyer (1994), and Varttala (1999).

Li and Gi (2009), for example, conducted a corpus-based genre analysis of the structural and linguistic evolution of medical research articles (RAs) written in English. The purposes were to analyze the frequency of occurrence of the 11 moves identified by Nwogu (1997), of the three most frequently used verb tenses (simple past, simple present and present perfect) and of the first person pronouns in 25 RAs published between 1985 and 1989 (Corpus A), on the one hand, and 25 RAs published between 2000 and 2004 (Corpus B), on the other. Results indicated that there were significant inter-corpus differences in the total number of the plural form of the first person pronoun, and its related cases and in their frequency of occurrence in the Methods, Results, and Discussion sections. The highest frequency in both corpora was in the Discussion section. The researchers claimed that the use of plural first person pronouns may help shorten the distance between researchers and readers and stress solidarity with readers.

In the soft science, Skelton (1997)'s findings indicated that discussion sections have a conventionalized structure because of their highly speculative nature. Skelton explained that in a discussion, writers cannot just repeat the results but they need to go beyond the evidence and not all statistically significant findings have clinical relevance. A focus of discussions in the quantitative approach is to reinterpret the significant as relevant so it may be subjective interpretation of data. Therefore, speculation was most frequent in the discussion sections, and almost entirely absent from other sections. Skelton also suggested that at other times, academic speech prefers the rhetorical technique of hedging the discourse to follow the premises of pragmatic politeness established by academia. In another study, Walko (2007) collected the data from the soft sciences and analyzed a corpus of four research articles in the *TESOL Quarterly* to

determine the use of politeness strategies by looking at how participants' 'face' is considered in the description of their practice and in the formulation of the authors' claims, and how the authors position themselves with respect to the *research* and *practice* contexts represented in their texts.

Findings from a study by Martinez (2001)'s findings revealed that impersonal constructions were mostly used in the Results and Discussion sections. In addition, the four sections present similar grammatical configurations across the three disciplines investigated in the study. Results also indicated that in the Method section, although cross disciplinary differences were found in rhetorical structure, the grammatical structure seems to be similar in this section across disciplines.

However, to the best of my knowledge, research studies quantitatively investigating the use of politeness strategies in RAs both across disciplines and across sections have been scarce. To this end, I attempt to elucidate politeness strategies most commonly used in RAs and to account statistically for their occurrence as well as to explore whether differences exist in the use of positive and negative politeness strategies across RA sections and across disciplines.

Corpus and Method

The corpus consisted of RAs collected from applied linguistics, educational technology, and economics journals published in the year 2009. The reason for selecting these three journals is that the journals are well-known and influential international journals based on the ranking of ISI Citation Reports (2009). The articles had to conform to the pattern of introduction (I), methodology (M), results (R), and discussion (D). Thirty-six articles were randomly selected to represent the publications of each of the journal to cover the one-year period of 2009; twelve in each group of disciplines. A summary of the three journal titles is presented in the following Table.

Table 1: Summary of the Three Journals Included in the Corpus

Journal Titles	**Ranking 2009 ISI Journal Citation Reports**	**Impact Factor**	**Frequency**
1. Modern Language Journal (MLJ)	9/92	1.914	4/yr
2. British Journal of Educational Technology (BJET)	32/139	1.255	6/yr
3. American Journal of Agricultural Economics (AJAE)	49/175	0.967	5/yr

Selection of Articles

A random selection of 12 research articles from each of the three journal titles in the year 2009 was made. Thirty six research articles were then downloaded from electronic journals in the NIDA E-library. Following Swales (1990), the corpus was selected from the four conventional sections: Introduction (I), Methodology (M), Results (R), and Discussion (D). The total corpus contains approximately 217,676 words of running text. This includes the Introduction sections (48,668 word or 22.36% of the corpus), the Method sections (54,905 words or 25.22% of the corpus), the Results sections (69,890 words or 32.11% of the corpus), and the Discussion sections (44,213 words or 20.31% of the corpus). It is obvious that the Results section is the largest section. (See Figure1)

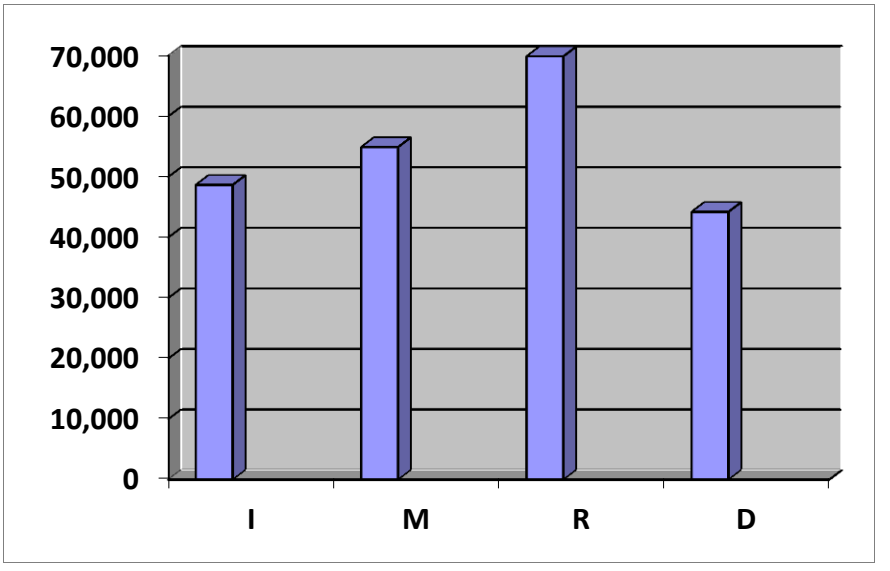

Figure 1: Numbers of Words in Each Research Section of the Whole Corpus

In addition, the comparison of the number of words in each section of each journal suggests that the *Modern Language Journal* contains the highest number in all sections except the Method section. The highest number in this section belongs to the *American Journal of Agricultural Economics* (See Figure 2).

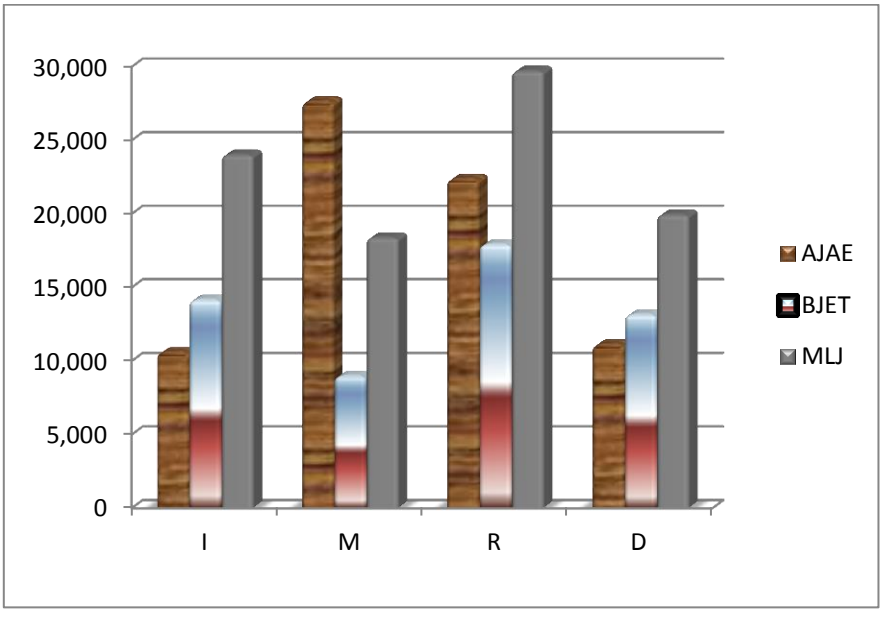

Figure 2: Numbers of Words in Each Section of Each Journal

As shown in Figure 2, when considering the relative length of sections in each of the disciplines, we can see that Introduction sections in applied linguistics (MLJ) are over twice the length of Introduction sections in Economics (AJAE) and almost twice the length of Introduction sections in Technology (BJET). In other words, the relative length of Introduction sections in applied linguistics is much longer than that of the same sections in other "harder areas of science". According to Hyland (1999), articles in social sciences tend to have longer and more complex introductions due to the lack of shared preconceptions and the resulting need for the definition of terms.

Lexical Features under Study

Criteria for the identification of politeness strategies are based on Brown and Levinson's (B & L's) model (1987) and Myers' model (1989) since they appear to be the most elaborated and influential models, as noted by Fraser (1990). However, I did not include giving gifts such as citations since all writers are required to have citations of all borrowed ideas. Brief descriptions of the focused lexical items in politeness strategies are provided in the following tables.

Table 2: Positive Politeness Strategies (PPS)

PPS 1 Claiming common ground

ppss 1.1 Claiming common views, attitudes and opinions by the use of:

a. modifiers assuming common ground: *an amazing sequence, an unexpected issue, etc.*
b. certainty adjectives: *clear, obvious, certain, sure, undoubted, definite etc.*
c. alternative or speculative expressions: *assumption, assume, assuming, speculate, speculation, speculating, etc.*

ppss1.2 Creating rapport by the use of:

a. rhetorical questions: *how does, why does, when does, what does, where does, how is, why is, when is, where is, what is, where is, etc.*
b. imperatives: *note that, recall that, observe, see table, see figure, please refer to, as shown in*, etc.
c. emotional responses to express personal attitude: *fortunately, unfortunately, interestingly, surprisingly*, etc.

PPS 2 Showing that writer and reader are cooperators

a. the use of inclusive pronoun "we" and its related cases

Table 3: Negative Politeness Strategies (NPS)

NPS 1. Don't coerce, mitigate the imposition by giving options. Be tentative by hedging
1.1 use modal verbs: *may, might, would, could*
1.2 use modifiers: *probably, possibly, probable, possible*, *likely etc.*
1.3 use tentative verbs: *suggest, indicate, seem, appear, tend, etc.*

NPS 2. Show you do not want to impose, dissociate yourself from the statement
2.1 use impersonal constructions 1: use phrases such *as these observations suggest, these results imply, this leads to the proposal, etc.*
2.2 use impersonal constructions 2: use *passive voice* without an agent
2.3 use introductory phrase: *it seems, it is interesting to, etc.*

NPS 3. Attribute all responsibility by personalization
3.1 Use personal subjects followed by performative verbs: *we reported, we concentrated*, *etc.*

Frequency Counts

The Mono Conc. Pro 2.2 (Barlow, 2004), a concordancing program recommended by experts such as Reppen (2001), was used to find the frequency of each politeness strategy. Then these frequencies were recorded in a spreadsheet. In addition to the automated counting, when the frequency counts involved the pronoun "we" and its related cases, all cases were investigated in context to ensure that they were inclusive first person pronoun uses and to determine their pragmatic function. In other words, all forms of *we, us*, and *our* referring to reader and writer were counted as an inclusive pronoun since there is a possibility that the use of "we" and its related cases may be used as exclusive first person pronoun to claim authority and exhibit some form of ownership of the content (Hyland, 2001, 2002) rather than creating rapport. Moreover, when text length is varied, as in this study, Biber (1995) suggests that the frequencies should be normalized. Therefore, the raw frequencies were normalized following Biber's (1995) method by having the raw frequency count divided by the number of words in the text and multiplied by 1000. After that the normalized frequency of each device was recorded. Then the normalized frequencies of all devices used in positive strategies and those in negative strategies were added

to produce the total number of positive strategies and the total number of negative strategies. In addition, the devices in each sub-strategy are added to produce a total of positive sub-strategies and a total of negative sub-strategies.

Data Analysis

Statistical treatment of the data

Descriptive statistics were used to find the averages of positive and negative strategies employed throughout in the whole corpus, as well as the average occurrences of politeness strategies at macro (strategy) and micro (sub-strategy) levels across research sections and across journal titles. The paired sample t-test was used to determine the differences in the use of positive and negative politeness strategies in the whole corpus and in each research section. The ANOVA test and the Pos hoc test were used to determine the differences in the use of politeness strategies across RA sections and across journals in the three disciplines.

Results, Discussions, and Conclusions

Most Commonly Used Politeness Strategies

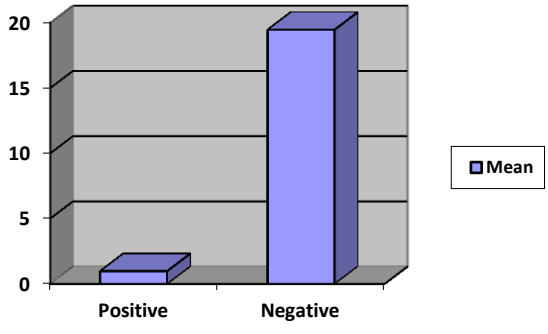

Figure 3: Averages of Positive and Negative Politeness Strategies

Figure 3 shows that the average of negative politeness strategies is 19.47 and that of positive politeness strategies is .98. It is obvious that the most commonly used politeness strategies are

negative politeness strategies. The next part discusses the use of each strategy.

Positive politeness strategies

Writers used positive politeness strategies to minimize the distance between writer and reader. The average of all positive politeness strategies in this study is .98. The most commonly used positive politeness strategy was the first strategy "*claiming common ground*" (with an average of .73). As indicated by Myers (1989), research writers use several strategies to show positive politeness such as strategic use of modifiers assuming common ground. In this study, the first sub-strategy, "*claiming common views, attitudes and opinions",* was most commonly used in the whole corpus (with an average of .55). In this sub-strategy, the highest incidence occurred in the use of certainty adjectives, followed by speculative expressions and modifiers. The following sentences show how positive politeness strategies were used. For example, writers used certainty adjectives to persuade readers to join the argument by presenting certain views (as seen in 1 to 3).

[1] However, it is also *clear* that an L1/L2 comparison alone does not provide an adequate basis for predicting whether learners will find a given language structure easy or difficult to master. (Introduction AJAE 4)

[2] The use of the case study approach is appropriate in this instance because the present study used a small sample size to explore situations where there is no *clear* or single set of outcomes, and to identify problems of practice by providing a holistic account of the phenomenon under investigation. (Method BJET 3)

[3] Another *obvious* limitation is the use of strong functional forms used for the demand and cost functions. (Discussion AJAE 2)

In addition, alternative or speculative expressions were used to show solidarity and involvement with readers. Writers assumed that readers shared the idea behind what they were claiming or the information that the writers might be criticizing (as seen in 4-6).

[4] To mimic the strategy followed by such literature, estimation is also performed using ML under the *assumption* that the errors defined by (10) and (11) are jointly normally distributed. (Method AJAE3)

[5] Unlike approaches to grammar that emphasize the acquisition of syntactic rules or processing procedures that are independent of the meaning of the individual lexical items in an utterance, construction-based approaches *assume* that form and meaning are linked and that constructions are acquired through an item-based process, often driven by the syntactic patterns associated with lexical verbs. (Introduction MLJ 3)

[6] Although it is unclear whether one group spent more time engaging in these post-class conversations than the other, it is reasonable to *speculate* that fluency gains in either group could have been influenced by this unaccounted variable. (Discussion MLJ1)

In addition to use of the first sub-strategy, writers used the second sub-strategy "*creating rapport*" including emotional responses, rhetorical questions, and imperatives. To show solidarity writers expressed emotion toward their research results (as seen in 7).

[7] *Interestingly*, learners with low self-regulation skills did not benefit significantly by the partially learner-generated mapping, contrary to the intention of the treatment design: the original assumption was that partially learner-generated

concept mapping would help learners with low self-regulation more because it combines the advantages of a mid-level of generativity and a pre-developed structure of an expert's schema that reduces learners' cognitive overload. (Discussion BJTE5)

Writers also used imperatives to make readers feel closer to the research by asking them to do something (as seen in 8-9).

[8] To see how wide this uniform distribution is, *note that* for the distribution of family net worth for all U.S. farm households in 2004, the ratio of the 95% quartile (= $2.36 million) to the 10% quartile (= $150 thousand) is only 15.7 (Economic Research Service, 2008). (Method AJAE3)

[9] In our study, even though the opportunity for cheating in OBOW was ranked slightly higher on this occasion (the reverse being true in the pilot study), the difference is small and, at 0.2, the smallest difference registered of all the dimensions being considered (*see table 1*). (Results BJTE1)

Furthermore, rhetorical questions were used to create rapport (as seen in 10).

[10] What about the use of historical experience, knowledge of institutions, and professional judgment as part of the process that produces Applied Economics? How about including the use of "economic intuition" in the mix? I would argue that all of these aspects of knowledge and approaches to analysis belong in the realm of Applied Economics. (Discussion AJAE 5)

With reference to the second strategy "*showing that writer and reader are cooperators*", the inclusive pronoun "we" and its related case were mostly used in the Discussion and the Introduction

sections. In this study, the use of this pronoun conveyed the idea that readers were perceived as colleagues or as fellow researchers and the writers wanted to reduce the gap between writer and reader (Harwood, 2005; Li & Gi 2009) and brought readers into the text (Hyland, 2002, 2005, 2008). This can be seen in 11.

[11] This is all the more remarkable if *we* consider that all of the test stimuli in this task had simple, affirmative structures and straightforward rhetoric and comprised high-frequency vocabulary items. (Introduction MLJ4)

Negative politeness strategies

The average of all negative strategies is 19.47. The highest occurring negative politeness strategy was "s*howing you don't want to impose*" (with an average of 13.29). As might be expected, in this strategy, the passive voice without an agent was most commonly used in all four sections but the highest incidence was in the Method section. This finding agrees with the notion that in the Method section the writer tries to reduce his presence and pay more attention to procedures. To do this, the passive voice without an agent is frequently used. This also suggests that research writing is very impersonal (as seen in 1-2).

[1] To analyze the impact of making futures available to adopters, a future availability scenario *is defined* as one in which they can costlessly hedge using futures contracts. (Method AJAE1)

[2] Unless games *are designed* specifically as curriculum resources, or else considerable support *is provided* for post-play reflection, relating experiences of play to formal education is problematic. (Discussion BJTE 6)

With regard to the first strategy "*being tentative by hedging*"; modals, modifiers, and tentative verbs, as might be expected, were most commonly used in the Discussion section. This finding is consistent with previous works (Burrough-Boenisch, 2005; Falahati

2009; Getkham, 2011; Lau, 2004; Myer, 1989; Salager-Meyer, 1994; Varttala,1999). According to Hyland (1999), the Discussion section contains mainly interpretations or tentative propositions for the research results. Research writers need to gain acceptance for their claims from authorities in their field and use several strategies aimed at persuading authorities of the truth of their claims. In so doing, politeness strategies are mostly used to mitigate claims or denials of claims (Hyland, 1996). It is obvious that the writers in this study used the first negative politeness strategy to present the findings and seek to establish their importance in Discussion sections (Hyland, 1999) as a means of gaining ratification for claims from a powerful peer group (Hyland 1996:434), as a means of showing politeness (Myers, 1989; Salager-Meyer, 1994) and as face-saving devices (Halliday, 1994).

The use of hedging devices to express politeness suggests that research writing is very conventional (as seen in 3).

[3] Another *possible* explanation for students' perceived interest in grammar teaching *might* be an experienced disconnect between teaching and testing. (BJTE 5)

With regard to the third strategy, "*the use of personalization to attribute all responsibility*", personal subjects followed by performative verbs were most commonly used in all four sections with the highest incidence in the Discussion section (as seen in 4).

[4] *We believe* that this inconsistency that marks all textbooks to some extent is not due to ignorance of or inattention to sociolinguistic concerns (prefaces demonstrated awareness of these aspects and several of the textbook authors are renowned sociolinguists). (Discussion MLJ 5)

In conclusion, it should be noted that, on average, negative politeness strategies, especially impersonality devices and hedges, were the most common strategies used by writers of RAs. This

suggests that research writing is very impersonal and limited by convention. The use of politeness strategies suggests that writing and reading RAs are interactive where politeness strategies play a vital role.

Differences in the Use of Politeness Strategies across RA Sections

Results of the analyses are shown in the following table.

Table 4: Averages of Politeness Strategies in the Four Sections

Strategies/sub-strategies	**I**	**M**	**R**	**D**
Alternative or speculative expressions	.20	.35	.14	.13
Certainty adjectives	.15	.08	.32	.44
Modifiers	.21	.00	.19	.00
ppss1.1	*.56*	*.43*	*.65*	*.57*
Rhetorical questions	.19	.00	.00	.06
Emotional responses	.14	.07	.05	.01
Imperatives	.00	.05	.11	.03
ppss1.2	*.32*	*.12*	*.17*	*.10*
PPS1	***.88***	***.55***	***.81***	***.67***
PPS2	***.36***	***.00***	***.18***	***.50***
All PPS	**1.24**	**.55**	**.99**	***1.17***
Modals	.98	1.91	1.31	2.99
Modifiers	.04	.00	.10	1.24
Tentative verbs	.66	.33	1.67	1.88
NPS1	***1.67***	***2.24***	***3.09***	***6.11***
Impersonal construction 1	.99	.01	.20	.12
Impersonal construction 2	9.29	18.20	12.69	11.41
Introductory phrase	.08	.00	.09	.08
NPS2	***10.36***	***18.21***	***12.97***	***11.61***
NPS3	***2.86***	***2.86***	***2.57***	***3.34***
All NPS	**14.89**	**23.31**	**18.63**	**21.06**

Table 4 shows that negative politeness strategies (All NPS) are more frequently used than positive politeness strategies in all four sections. The highest incidences occur in the Method section, followed by the Discussion section (with averages of 23.31 and 21.06, respectively). The most commonly used strategy is the second strategy "*showing that you don't want to impose*" with the highest occurring strategy in the Method section. Writers in this study rarely use positive politeness strategies; however, positive politeness strategies are the most frequently used in the Introduction section. Overall, the use of the first strategy "*claiming common ground*" is almost even in the Introduction and the Results sections (.88 and .81, respectively) but the use of the first sub-strategy "*claiming common view, attitudes, or opinion*" is almost even in the Introduction and the Discussion sections (.56 and .57, respectively). Significant differences in the use of positive and negative politeness strategies occur in each section and in all sections of the whole corpus ($p < .001$). Differences in the use of politeness strategies across RA sections are discussed in two parts: positive politeness strategies and negative politeness strategies.

Differences in the use of positive politeness strategies

Although the results showed that positive politeness strategies were most frequently used in the Introduction section, at macro level, statistical differences in the use of the positive strategies and sub-strategies were not found across research sections. However, at the micro level, when examining the devices used in each strategy, results of the ANOVA test revealed differences in the use of two devices in the first sub-strategy including certainty adjectives such as the use of *clear, obvious, certain, sure, definite, etc.* ($p < .05$) and modifiers such as *an interesting case, an unexpected issue, etc.* ($p = .001$) as well as the use of imperatives in the second sub-strategy ($p < .05$). However, multiple comparisons revealed that differences across sections occurred only in the use of modifiers indicating that writers in this study most frequently used stance adjectives and adverbs or

intensifiers to show their feelings and personal attitudes in the Introduction section.

Though the multiple comparisons did not yield significant differences across sections in the use of the other two devices (certainty adjectives and imperatives), it is worth mentioning the use of these two devices. The use of certainty adjectives occurred most frequently in the Results and the Discussion sections suggesting that in these two sections writers in this study used certainty adjectives as explicit devices to indicate shared background knowledge in their claims (Gil-Salom & Soler-Monreal, 2009). In addition, the frequent use of imperatives in the Results section suggests that in the Results section writers usually tell readers where to find additional information when they present results (Hyland, 1996, 1999).

Differences in the use of negative politeness strategies

With reference to negative politeness strategies, highly significant differences occurred in the use of the first strategy "*being tentative by hedging*" (modals, modifiers, tentative verbs) and in the second strategy "*showing that you don't want to impose*" (impersonal constructions 1 and 2). These findings are consistent with Walko's (2007) study in that both hedging and impersonality were most frequently used as negative politeness strategies. However, the multiple comparisons revealed that significant differences occurred in the use of modal verbs (between D and I, between D and R), in the use of modifiers (between D and I, between D and M, between D and R) and in the use of tentative verbs (between R and I, between R and M, between D and I, between D and R). These findings reveal that the highest occurrences of hedging devices were found in Results and Discussion sections (e.g. Varttala, 1999), but this study shows that only the use of tentative verbs was similar in these two sections. The use of the other two devices: modal verbs and modifiers were significantly different.

In addition, significant differences occurred in the use of the second strategy: impersonal construction 1—using phrases such *as these observations suggest, these results imply, this leads to the proposal, etc.* and impersonal construction 2—using passive voice without an agent. The findings reveal that impersonal construction 1 was used differently in the Introduction and Method sections, and in the Introduction and Results sections, as well as in the Introduction and Discussion sections. This reveals that the strategic choices made by the writers allowed them to retreat to the background in the Introduction section. The findings that impersonal construction 2 was used differently in the Method and Introduction sections, and in the Method and Results sections, as well as in the Method and Discussion sections agrees with the notion that in the Method section the writer tries to reduce his presence and to pay more attention to procedures (Hyland, 1996). In so doing, the passive voice without an agent is frequently used. This also suggests that research writing is very impersonal. The findings also indicate that the writers used the second strategy in Results and Discussion sections to strategically distance themselves from the text and to objectively present findings in a suitable style in order to persuade readers of their validity (Gil-Salom & Soler-Monreal, 2009; Martinez, 2001; Myers, 1989).

Differences in the Use of Politeness Strategies across Disciplines

Cross disciplinary differences were found in the use of positive politeness strategies but no differences were found in the use of negative politeness strategies. This suggests that the writers in these three disciplines all paid more attention to distancing or minimizing imposition. Differences in the use of politeness strategies across disciplines are discussed in two parts: positive politeness strategies and negative politeness strategies.

Differences in the use of positive politeness strategies

Results of the analyses are shown in the following table.

Table 5: Averages of Positive Politeness Strategies in Three Journals

Strategies/sub-strategies	**AJAE**	**BJET**	**MLJ**
Alternative or speculative expressions	.44	.02	.15
Certainty adjectives	.24	.24	.27
Modifiers	.11	.05	.14
ppss1.1 Claiming common views, attitudes, and opinions	.79	.31	.56
Rhetorical questions	.05	.13	.01
Imperatives	.11	.02	.02
Emotional responses	.14	.01	.05
ppss1.2 Creating rapport	.29	.16	.07
PPS1 Claiming common ground	1.08	.47	.63
PPS2 Showing that writer and reader are cooperators			
Inclusive pronouns	.08	.17	.49

With reference to positive politeness strategies, the writers in the three disciplines used the two positive strategies differently ($p<.05$). The first strategy was used most often in Economics (1.08) and least often in Technology (.47). However, in the first strategy significant difference was found only in the use of the first sub-strategy. In this sub-strategy, differences across disciplines in the use of alternative or speculative expressions was highly significant ($p<.01$). This sub-strategy was used more often in Economics (.79) than in Technology (.31) or Applied Linguistics (.56).

Though significant differences were not found in the use of the second sub-strategy "*creating rapport*", significant differences were found in the use of its devices: imperatives and emotional responses ($p<.05$). Similar to the use of alternative or speculative expressions, the use of imperatives was found more often in Economics (.11) than in Technology (.02) or in Applied Linguistics (.02). This is also true with the use of emotional responses.

With reference to the second strategy which is used to decrease the distance between reader and writer, significant differences in the use of the inclusive pronoun "we" and its related cases were found across the three disciplines ($p<.05$). The use of this strategy was more frequent in Applied Linguistics (.49) than in Economics (.08) or Technology (.17).

Findings indicate that cross-disciplinary variation in the use of positive politeness strategies was highly relevant since it showed that what should be included or not included depended on the different knowledge structures of different scientific communities and how researchers deal with research issues differently.

Differences in the use of negative politeness strategies

Results of the analyses are shown in the following table.

Table 6: Averages of Negative Politeness Strategies in Three Journals

Strategies/sub-strategies	**AJAE**	**BJET**	**MLJ**
NPS1 Being tentative by hedging	3.37	3.00	3.46
Modals	1.69	1.83	1.88
Modifiers	.28	.28	.48
Tentative verbs	1.40	.89	1.11
NPS2 Showing you don't want to impose	12.21	13.28	14.38
Introductory Phrases	.07	.03	.09
Impersonal(1)	.31	.22	.46
Impersonal (2)	11.82	13.03	13.84
NPS3 Attributing all responsibility by personalization	3.09	1.68	3.94

Significant differences across disciplines were not found in the use of negative politeness strategies, especially the use of the first strategy "being tentative by hedging." This finding is consistent with Falahati's (2009) study. However, it should be noted that the highest occurrence of negative politeness strategies was in Applied Linguistics and the lowest occurrence was in Technology. The lowest occurrence

of the third strategy "*attributing all responsibility by personalization*" was in Technology. In addition, the writers in Technology and Applied Linguistics more frequently employed the second strategy "*showing that you don't want to impose*" by using passive voice without an agent in the Method section whereas writers in Economics more frequently employed this device in the Results section. This suggests that in Technology and Applied Linguistics, writers try to reduce their presence and pay more attention to procedures than to researchers (Hyland, 1996) while the writers in Economics strategically distanced themselves from the text and objectively presented findings in a suitable style in order to persuade readers of their validity (Gil-Salom & Soler-Monreal, 2009; Martinez, 2001; Myers, 1989).

Conclusions

Several conclusions can be drawn from the findings of this study. First, academic/research writing is more than presenting a collection of facts. It also presents writers' views and manners (Hyland, 2005). It should be noted that Grice's (1975) Cooperative Principle, especially his maxim of manner, as well as the FTA model (Brown & Levinson, 1978, 1987) play a crucial role in the research genre. Second, both positive and negative politeness strategies were employed but negative politeness strategies were more frequently used. This indicates that writers in these three disciplines all paid more attention to mitigating imposition than to gaining approval. Impersonality devices and hedges are common strategies used by writers of RAs. Findings revealed that impersonal constructions were mostly used in the Methods, Results and Discussion sections. This suggests that research writing is very impersonal and limited by convention (Hyland, 1999). The use of hedging devices also plays an important role in RAs; especially in the Introduction, Results, and Discussion sections where writers mitigate imposition on readers and reduce writers' commitment to the truth of their claims. Therefore, we can conclude that the distribution of these devices is independent of the rhetorical function of each section. Third, certain disciplines such

as Economics favor the maintenance of distance between the reader and the writer since the inclusive "we" – showing that reader and writer are cooperators – was less frequently used than in the other two disciplines. Applied linguistics and Technology were more impersonal as impersonality devices were more frequently used than in Economics. In conclusion, discourse choices are socially grounded and influenced by the different contextual and social features of researchers' disciplines. Followings are recommendations for classroom instruction and future research.

Recommendations for Instruction

Professional researchers employ several politeness strategies when writing research articles. The use of these strategies depends primarily on the functional properties and the textual variation. It is suggested that course designers should be aware of genre structures relevant to research or academic writing curriculums. For example, when developing teaching materials, instructors should include several devices, each identified for particular functions, such as reporting established knowledge, politely making comments, and cautiously framing claims. Moreover, for non-native English speaking students, training in awareness of different kinds of politeness strategies as well as pointing out the relationships among functions and language would enhance their ability to acquire skills in academic writing. It is possible to provide a template for structuring academic writing. This template may be built up from the exemplary quotations in the text, to provide assistance to educators and less experienced writers.

In addition, the corpus can be used as an authentic example of RAs. Teachers can make suggestions to students as they research the language using a data-driven, inductive approach (Beatty, 2003). With teacher encouragement, this process can both stimulate students' curiosity and encourage them to actively and independently engage with the language. Incorporating this actual strategy into the curriculum may help students read efficiently and to eventually write

this style of discourse in order to increase the chance of having their papers accepted for publication.

Recommendations for Future Research

More studies should be conducted to enhance greater understanding of politeness strategies used in academic writing, especially research writing. Those studies should include research articles in soft science and hard science. It might also be interesting to investigate theses or dissertations. Future research may investigate all politeness strategies such as giving gifts, off-record which had not been the focus of this study. Furthermore, it may be interesting to conduct a meta-analysis of the evolution of the use of first person pronouns in research article sections during 2000-2010. Apart from these, future research may investigate hedging devices in research articles across disciplines.

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APPENDIX
A LIST OF JOURNAL ARTICLES IN THE EXAMPLES

AJAE 1 Lence, S.H. (2009). Do futures benefit farmers? *American Journal of Agricultural Economics***,** *91* (1): 154-197.

AJAE 2 Bonanno, A. and Lopez, R.A. (2009). Competition effects of supermarket services. *American Journal of Agricultural Economics, 91* (3): 555-568.

AJAE 3 Lence, S.H. (2009). Joint estimation of risk preferences and technology: Flexible utility or futility? *American Journal of Agricultural Economics, 91* (3): 581-598.

AJAE 4 Kilkenny, M. and Partridge, M.D. (2009). Export sectors and rural development. *American Journal of Agricultural Economics, 91* (4): 910-929.

AJAE 5 Mittelhammer, R. (2009). Applied economics - without apology**.** *American Journal of Agricultural Economics, 91* (5): 1161-1174.

BJET 1 Williams, J.B. and Wong, A.(2009). The efficacy of final examinations: A comparative study of closed-book, invigilated exams and open-book, open-web exams. *British Journal of Educational Technology, 40* (2): 227-236.

BJET 2 Marriott, P. (2009). Students' evaluation of the use of online summative assessment on an undergraduate financial accounting module. *British Journal of Educational Technology, 40* (2): 237-254.

BJET 3 Omale, N., Hung, W., Luetkehans, L., and Cooke-Plagwitz, J.(2009). Learning in 3-D multiuser virtual environments: Exploring the use of unique 3-D attributes for online problem-based learning. *British Journal of Educational Technology, 40* (3): 480-495.

BJET 4 Oliver, M. and Carr, D. (2009). Learning in virtual worlds: Using communities of practice to explain how people learn from play. *British Journal of Educational Technology, 40* (3): 444-457.

BJET 5 Lim,K.Y., Lee, H. W., and Grabowski, B. (2009). Does concept-mapping strategy work for everyone? The levels of generativity and learners' self- regulated learning skills. *British Journal of Educational Technology, 40* (4): 606-618.

MLJ 1 Blake, C. (2009), Potential of text-based Internet chats for improving oral fluency in a second language. *The Modern Language Journal, 93*(3): 227– 240.

MLJ 2 Collins, L., Cardoso, W., and Trofimovich, P. (2009). Some input on the easy / difficult grammar question: An empirical study. *The Modern Language Journal, 93* (3): 336- 353.

MLJ 3 McDonough, K. and Kim, Y. (2009). Syntactic Priming, Type Frequency, and EFL Learners' Production of *Wh*-Questions. *The Modern Language Journal, 93* (3): 386- 398.

MLJ 4 Kato, S. (2009). Suppressing inner speech in ESL reading: Implications for developmental changes in second language word recognition processes. *The Modern Language Journal, 93*(4): 471-488.

MLJ 5 Etienne, C. and Sax, K. (2009). Stylistic variation in French: Bridging the gap between research and textbooks. *The Modern Language Journal, 93*(4): 584–606.