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## Research Paper

### A Logogenetic Delve into Attitudinal Meanings in Native vs. Non-Native Discussion Section of Research Articles

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#### Abstract

Using evaluative language has been considered as the significant predictor of academic writing success in second and foreign language research. Such an importance paved the way for the current study to investigate the use of the APPRAISAL tool, namely ATTITUDE resources, in the research articles (RAs) written by native (N) and non-native (NN) writers, focusing on the discussion sections. A qualitative corpus selection resulted in choosing 30 RAs written by American writers and 30 authored by Iranian writers. Two coding schemes were used: one for discussion boundaries based on Kanoksilapatham's (2005) discussion move structure, and the modified version of APPRAISAL theory (Xu, 2017) for identifying attitudinal resources. The corpus analysis revealed that academic writers preferred to use a great number of inscribed ATTITUDE resources, that is, APPRECIATION tools compared to JUDGMENT. There was also a significant difference between N and NN sub-corpora in using attitudinal resources, highlighting that the language of N RAs contained more authorial stance of ATTITUDE compared to NN sub-corpus. However, the use of idioms as evoked ATTITUDE was found to be frequently applied by NN authors. The findings of the study contributed to the significance of using evaluative language in academic writing through which the writers can make a dialogic interaction with readers and enhance their critical stance by involving them in the argument.

**Keywords:** *Academic writing, appraisal theory, Attitude, Affect, Appreciation, Evaluative Language, Judgement, Logogenetic Approach*



## Introduction

There have been changes in the viewpoints towards writing in general and academic writing in particular, as other branches of science. The research articles (RAs) have traditionally been perceived to have impersonal, objective, and unbiased style, primarily focusing on conveying factual information (Gray & Biber, 2012; Hyland, 2005; Mauranen & Bondi, 2003). This conventional view of academic writing has been challenged by some researchers (e.g., Harwood, 2005; Hyland, 2001), and has evolved from a focus on the text to a focus on the writer and lately to the reader (Hyland, 2009). As a result, the discourse has come to be seen as a persuasive enterprise involving interaction between readers and writers. In the same direction, different studies (e.g., Hood, 2010; Hyland, 2005) argued that academic writing was a persuasive endeavor, in which evaluation plays a crucial role in potentiating such persuasiveness.

To make an effective academic text, authors “present a clear position and show engagement with a range of ideas to support it” (Yuliana & Gandana, 2017, p. 613). The interaction between a writer and readers can be accomplished through the interpersonal meanings of the text, by using arguments so that the readers are persuaded (Jalilifar & Hemmati, 2013). The features which help the writer realize personal attitudes and interpersonal aspect of the texts have become the subject of inquiry (Hyland & Paltridge, 2011). Some major approaches to this function of language include *evidentiality* (Chafe, 1986), *affect* (Ochs & Schieffelin, 1989), *stance* (Hyland, 2005), *hedging* (Hyland, 1998), *evaluation* (Hunston & Thompson, 2000), and *appraisal* (Martin, 2000; Martin & White, 2005).

Yet, building evaluative stances imposes a great challenge for L2 writers. Using evaluative language and critical stance in writing has been considered as one of the most important demands L2 writers have encountered in order to produce their own argument in presenting their research (Chang & Schleppegrell, 2011). Generally, there is a lack of stance-taking in student academic writing (Hood, 2004) and there is a lack of awareness regarding the production of an argument as an academic genre in writing research. Thus, the lack of evaluative and critical stance in EFL writers’ texts is a concern which has been repeatedly stated in the literature (e.g., Feak & Swales, 2009; Swales & Lindemann, 2002).

Novice L2 research writers can experience a gap between their disciplinary knowledge and their ability to write about that knowledge in English (Ivanic & Camps, 2001). For example, studies (e.g., Chang & Schleppegrell, 2011; Hood, 2004) have indicated that writers of soft disciplines might find it problematic to make a balance between being humble (i.e., acknowledging others’ perspectives) and authoritative (i.e., expressing their own interpretations and points of view directly), leading to being less successful in writing performance, particularly in publication an RA. Actually, the majority of rejected RAs can be attributed to the writers’ failure to pay attention to hedges, linking ideas, consistency, argumentation, authorial voice, and the reviewers’ expectations of academic discourse apart from grammar and lexical errors (Englander, 2006; Flowerdew, 2001).

Although previous studies have acknowledged the significance of academic stance, there are still a number of gaps demanding to be considered. Evaluative language and stance-taking strategies have been studied from a variety of approaches, both from a functional approach (Hyland, 1998; Martin & White, 2005; Ochs & Schieffelin, 1989; Hunston & Thompson, 2000) and from a linguistic approach (Dressen, 2003; Tucker, 2003). However, the paucity of knowledge about how evaluative meanings work within specific genres is still a gap in the existing literature on evaluative language. Furthermore, little is known about how academics who are EFL researchers and students, especially Iranians, utilize APPRAISAL systems in their research.

This study provides a comprehensive linguistic explanation of the concepts of stance and voice in the Discussion section of N and NN RAs. The analyses of this study indicate how evaluative language is strategized through structuring of academic texts, and through co-articulating interpersonal meaning with textual and ideational meaning. The evaluative strategies in the two text types (N and NN) can be compared as they demonstrate how APPRAISAL systems develop.

Evaluative language in academic writing has been found to be an important indicator of writing success. Authors of academic RAs initially introduce the research by highlighting the existing gaps, concentrate on the employed methodological approach, maneuver on novel findings and acknowledge their significance to the field (Hyland, 2000). The second reason concerning the significance of evaluation in academic writing is reflected in its undeniable role in creating interaction between the writer and the reader. Since evaluation is personal and subjective (Hunston, 2011), the authors benefit from evaluative language to persuade their audience to involve the reader in building a critical stance regarding the author's claim. Therefore, it seems necessary for conducting further research by taking into consideration stance-taking patterns in academic discourse in order to provide data for teaching and practicing such interactive resources of language in context.

It should be pointed out that, in APPRAISAL model, genesis (that is, how deeply text analyst delves into time when he/she studies semiotic variation) is one of the complementary lenses of SFL which plays an important role. A draft of logogenetic, ontogenetic, and phylogenetic time-frames which outlined by Halliday and Matthiessen (1999) states logogenetic approach as a relatively short-time frame regarding a text instantiation. Halliday and Matthiessen (1999) put that, ontogenesis studies the progress of semiotic collections in the individual and phylogenetic approach favors the growth of the of meaning reservoirs which in its turn identifies culture. In this study the shortest of these frames of time, that is, logogenesis was the focal point of attention in analysis of the corpus.

### Literature Review

Research on evaluative language has witnessed the second and foreign language scholars' interests in adopting APPRAISAL theory to investigate the way evaluative stances were used by the authors or language user to show their critical potentials. Hood (2004) aimed to examine the stance taking styles by published authors and student authors using the APPRAISAL theory. The study findings revealed that published authors employed more linguistic resources relevant to the APPRECIATION type of ATTITUDE to evaluate results whereas student authors developed their texts as more subjective and personal utilizing JUDGEMENT and AFFECT attitudes.

Another inquiry which is worthy of mention is Mei and Allison (2007). They believe that evaluative language is extensively identified as an instrumental contributor to the quality of written discourse; however, studies in this domain is more common in professional academic argumentation than in learners' texts. Thus, the researchers attempted to examine evaluative items in argumentative texts written by English learners. APPRAISAL framework aspects, particularly the ENGAGEMENT category, were employed to identify the evaluative statements in the argumentation stages defined by Callaghan and Rothery (1988). Findings indicated that low-rated and high-rated essays were different in the "frequency of the use of the stages of thesis and reiteration to construct more or less effective arguments" (p. 105). Moreover, evaluative statements contributed to arguments were more or less persuasive.

In a different yet relevant study, Liu and Thompson (2009) examined the utilization of evaluative language in EFL learners' argumentative writing in both Chinese and English based

on APPRAISAL theory. The study focused on one of the APPRAISAL theory's subsystems, namely ATTITUDE, in the learners' writing and identified potential similarities or differences in the attitudinal values distribution. Findings revealed the same patterns in using APPRECIATION expressions but obvious differences in JUDGEMENT and AFFECT items in the learners' Chinese and English essays. In the final section, the study suggested the essential requirement of various socio-cultural and linguistic prospects to describe second language learners' use of evaluative language in their writings.

Employing the APPRAISAL theory resources of Martin and White (2005) and Martin (2000), Lv (2015) examined EFL students' argumentative essays regarding two aspects: what discriminates second language from first language authors' evaluative language in argumentative essays and how various essays topics initiate various evaluative patterns in second and first language essays. The study indicated that NN and N authors used similar APPRAISAL pattern to deal with various essay topics, however, N writers employed more negative evaluative expressions to express contradictory points. It was suggested that language learners' inadequate lexical proficiency, particularly of expressions describing polarizing and negative meanings might restrict their ability in critical thinking included in argumentative writing tasks. It was also suggested that using appropriate teaching strategies can enhance the lexical proficiency of evaluative language, thus, promoting the language learners' persuasive writing capacity.

Another pertinent study was undertaken by Geng and Wharton (2016) who examined the evaluative language used in 12 doctoral theses discussion sections from a single discipline and institution. The study's analytical perspective drew on the ENGAGEMENT system of APPRAISAL framework (Martin & White, 2005). The researchers attempted to reveal the evaluative expressions that were used most frequently and to add a genre-specific supplement to the framework. Then, N English and Chinese authors were compared. No significant variations were observed in the patterns of choices and it was concluded that in that situation and at that level, L1 did not appear to be a factor which affected evaluative language choices.

In a different study, Ngongo (2017) analyzed students' English theses writing to examine the use of text APPRAISAL. The result of the analysis revealed that text APPRAISAL used covered three kinds of ATTITUDE, namely APPRECIATION, AFFECT, and JUDGEMENT. Moreover, ENGAGEMENT and GRADUATION could be also included in language evaluation. ENGAGEMENT was the most frequently used. Regarding ATTITUDE, the use of JUDGEMENT was more than APPRECIATION and APPRECIATION, which revealed that the participants' writings were more emotional and personal than appreciative. Furthermore, ENGAGEMENT was employed more than GRADUATION, which revealed that undergraduate learners employed types of attribute, entertain, and expand, though in GRADUATION; yet, students had more concerns for quantification and intensification and ignored the use of softening and sharpening resources. This fact indicated that learners need more instruction and training regarding evaluating language and academic writing.

In the context of Iran, Jalilifar, Hayati, and Mashhadi (2012) investigated the introduction sections of RAs to identify how international and Iranian authors of English were constructing knowledge in research articles. The study explored how authors used evaluative stance as they constructed an argument for their own research. Their findings indicated that the international authors used more explicit GRADUATION and ATTITUDE resources than Iranian authors. It was concluded that lack of variation in grading ATTITUDE in the process of producing an argument in the Iranian English articles implied that these articles could not conform to the discourse community's conventions.

Similarly, Jalilifar and Hemmati (2013) examined how Iranian English learners used APPRAISAL resources within their writing context. The study further examined whether the APPRAISAL framework could be used as an assessment scale for the evaluation of the learners' argumentative writing. The research instruments involved a framework for the APPRAISAL resources analysis and a rating scale for evaluating the essays regarding the macrostructures used in them. Their results indicated that high-graded articles used a lower number of monoglossic items and more attitudinal resources than low-rated essays. According to the researchers, "the high-graded essays articulated attitudinal values in nominal forms and sometimes in a backgrounded manner while these values were mostly presented by surge of feelings and in a foregrounded way in the low-graded essays" (p. 57). With regard to ENGAGEMENT, the low-rated essays were weak in identifying alternative positions and other voices. Motivated by the influence of the APPRAISAL model, the findings proposed that high-rated articles were successful in illuminating the ethical idea to readers and positioning addressees attitudinally.

The production of coherent and well-organized texts is one of the challenges of academic writing. Metadiscourse helps academic writers attain this purpose by enhancing the authors' awareness about discourse features that can improve the overall quality of their writing. Accordingly, Dehghan and Chalak (2016) conducted a study to investigate how similarly Iranians and native English speakers employ a sub-category of metadiscourse, namely code glosses, throughout their writings. In order to achieve this aim, they investigated 30 journal articles and analyzed the code-glosses. Their result indicated that no significant difference existed between the frequency of code glosses deployed by N English and Iranian writers.

Being a successful academic writer is closely related to the use of stance strategies supported by Shirzadi, Akhgar, Rooholamin, and Shafiee (2017) who attempted to show the differences between American and Iranian EFL authors in employing stance strategies in academic papers. Their results indicated no significant differences between NN and N authors in utilizing stance strategies; however, N authors employed self-mentions, attitude markers, and hedges more than NNs, while N authors utilized more boosters.

One of the most recent studies worth mentioning is the research conducted by Azar and Hashim (2019) who examined what kind of attitude markers were typically employed to foster evaluation in the articles and to explore their functions in various parts of the articles. Findings revealed that the conclusion section had the highest frequency of attitude markers compared with other parts in the corpus. Among the four types of attitude markers, two types (that is, attitudinal adverbs and adjectives) were the most frequently used. The research indicated how the writers interact with their readers to illuminate their evaluation and express significance, gaps and limitations, compare, contrast, and criticize the research developments.

To sum up, the findings of previous research inform that various disciplines indicate various patterns of stance taking, and APPRAISAL resources had a positive influence on learners' level of critical reading and writing ability. Numerous investigations have examined the variations in different academic writing genres across various disciplines; however, authorial stance in academic discourse of certain disciplines like ELT and Applied Linguistics has apparently not been paid sufficient attention to and requires more careful exploration. To fill this gap, the present study investigated APPRAISAL ATTITUDE systems in English academic discourse written by N and NN speakers in the discussion sections of RAs by addressing the following research questions:

RQ1. How is evaluative stance construed through ATTITUDE in the generic structures of academic discourse published by N English speakers?

RQ2. How is evaluative stance construed through ATTITUDE in the generic structures of academic discourse published by NN English speakers?

RQ3. What are the similarities and differences of the academic discourse published by N and NN English speakers in terms of logogenetic attitudinal systems?

### **Method**

Non-experimental in nature, the present study benefitted from qualitative corpus selection of RAs and quantitative part of the study can be the coding scheme and the analytical measures for investigating the distributions of APPRAISAL resources in the discussion sections of RAs.

### **Corpus of the Study**

The source of corpus collection of this study was ScienceDirect ([www.sciencedirect.com](http://www.sciencedirect.com)), which is an online database. The decision to concentrate on one single database to collect both N and NN RAs was made in order to minimize the possible impact of distinctive scientific and language requirements and also to decrease major differences in argumentation style policies of different journals. All collected RAs were in the soft discipline of Applied Linguistics, which were written by N and NN researchers and were published between 2014 to 2019. Therefore, 30 RAs written by American authors and 30 RAs authored by Iranian scholars were considered as the main corpus of the study of which the discussion sections of the articles were finally selected based on the coding framework explained below.

### **Coding Frameworks**

The coding system for the present study constituted the framework for coding the discussion sections of RAs and coding ATTITUDE resources used by the N and NN authors. Each coding scheme is explained in the following.

### **Coding Scheme for Discussion Boundaries**

In order to clearly specify discussion section of each RA and also keeping in mind that there are some differences in heading styles across different RAs and different journals; for example, discussion may or may not include conclusions or implications/limitations parts, move structure of a RA discussion section proposed by Kanoksilapatham (2005) was implemented to decide on discussion section boundaries through close reading.

Kanoksilapatham (2005) identifies four moves in the discussion section. He proposes that authors typically begin their discussion sections by ‘contextualizing the study’ (Move 1), relating their own research to the previous works in the field, reflecting a sense of membership in the larger scientific community. Thus, Move 1 provides a detailed description of the study and is realized by two steps. Step 1 (describing established knowledge) situates the study being reported in the interest of the discourse community. Step 2 (presenting generalizations, claims, deductions, or research gaps) permits the authors to go beyond the results and place their work under the scrutiny of the discourse community.

Once the research community is addressed, authors usually move to underlining the strengths of their work and defending their study successes (Move 2: consolidating results). This move is realized as one step or a combination of steps, such as restating methodology, stating selected findings, referring to previous literature, explaining differences in findings, making overt claims or generalizations, and exemplifying. In Move 3, writers state the limitations of their study in terms of the findings (Step 1), the methodology (Step 2), or the claims (Step 3). In Move 4,

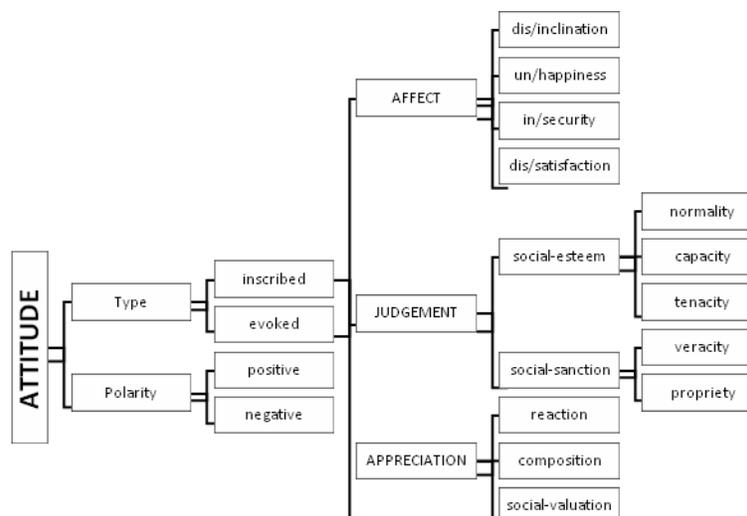
authors suggest further research and recommendations by offering some research questions or improvements in their research methodology.

### Coding Scheme for ATTITUDE Tools

APPRAISAL theory was developed within Systemic Functional Linguistics (SFL), which, as noted by Halliday and Matthiessen (2004), identifies language as a resource that is used for making meaning and simultaneously construes textual, interpersonal, and ideational meanings regarding the context of use. Thus, this theory is specifically concerned with “interpersonal meanings from the functional perspective” (Geng, 2015, p. 80). Major APPRAISAL categories include ATTITUDE, ENGAGEMENT, and GRADUATION. These semantic categories work together to build an interpersonal stance. ATTITUDE is actually the most investigated subsystem and is regarded as an umbrella term for evaluative language. This system of meanings for mapping the expression of feelings and involves three sub-systems: AFFECT, which refers to emotional responses; JUDGEMENT, which deals with the evaluation of individuals and their behaviors; and APPRECIATION which refers to the evaluation of things or entities. These subsystems have also their own subcategories. Xu (2017), inspired by a profound literature on academic discourse, modified ATTITUDE system and made it more applicable to RA in particular. This study implemented this modified version to code attitudinal values of N and NN sub-corpora of RAs (see Figure 1).

### Figure 1

*Coding scheme for ATTITUDE analysis (adapted from Xu, 2017).*



### Corpus Analysis Procedure

Two main sub-corpora were used in this study based on the coding schemes used for discussion selection of RAs and for employing APPRAISAL attitudinal analysis. After coding the whole corpus and evaluating inter-coding agreement of the double-coded parts of each coding process, the results were arranged in tables of frequencies and percentages. In other words, the data were analyzed using both descriptive (frequencies and percentages) and inferential statistics. To compare the differences and see if these differences are statistically significant, a two-tailed Mann-Whitney U test ( $p \leq .05$ ) was administrated using IBM SPSS Statistics software (version 26).

## Coders

There were two independent coders from the same field who worked on the corpus of this study. The first one was a PhD student of TEFL and the second one was a PhD graduate. The first coder did the coding of the whole corpus using coding scheme for discussion section boundaries and coding scheme for APPRAISAL attitudinal tools. After each coding process, to confirm the reliability of the process and to decrease subjectivity in the coding process, the inter-coder reliability was measured using partial intersection between two coders technique. That is, 20 RAs (10 out of N sub-corpus and 10 out of NN sub-corpus) were randomly selected and the second coder went through each one to identify any coding disagreement using coding scheme for discussion section boundaries and coding scheme for ATTITUDE tools.

Using IBM SPSS Statistics software (version 26), Cohen's kappa coefficient ( $\kappa$ ) was computed to identify inter coder reliability of identification of discussion section boundaries and attitudinal tools. The Kappa measure of agreement values for the identification processes of the discussion section boundaries and ATTITUDE tools were .999 and .998, respectively with a significance of  $p < .05$ . According to Peat (2001), a value of .5 for Kappa represents moderate agreement, above .7 represents good agreement, and above .8 represents very good agreement. Thus, the level of agreement between the coding processes made by the two coders was very good.

## Results

ATTITUDE is a system of meanings concerned with "our positive or negative feelings, including emotional reactions, judgments of behavior, and evaluation of things" (Martin & White, 2005, p. 42). Breaking down ATTITUDE types and closely comparing the distribution of explicitly inscribed and implicitly evoked attitudinal instances in the collected corpora of N and NN RAs, showed that instances of inscribed ATTITUDE were higher than evoked ATTITUDE for both N and NN groups. However, N sub-corpus used higher instances of inscribed ATTITUDE for indicating their attitudinal meanings than NN sub-corpus. In contrast, attitudinal values were evoked by N writers less than their NN counterparts (see Table 1).

**Table 1**

*Distribution of Attitudinal Types and Polarity in N and NN Sub-Corpora*

ATTITUDE	Sub-Corpus				
	N		NN		
	<i>f</i>	%	<i>f</i>	%	
Type	Inscribed	994	98.1	821	95.5
	Evoked	19	1.9	39	4.5
	Total	1013	100.0	860	100.0
Polarity	Positive	759	74.9	610	70.9
	Negative	254	25.1	250	29.1
	Total	1013	100.0	860	100.0

Comparing the polarity of attitudinal resources in two sub-corpora showed that, the number of positive instances was higher than negative instances in both N and NN groups. Besides, N speakers used higher positive attitudinal components than NN group. However, the contrast concerning the use of negative ATTITUDE between the two groups was marginal.

The results of explicitly inscribed ATTITUDE analysis (that is, AFFECT, JUDGEMENT, and APPRECIATION) in both N and NN sub-corpora are given in Table 2.

**Table 2**

*Distribution of Inscribed ATTITUDE Types in N and NN Sub-Corpora*

Inscribed ATTITUDE	Sub-Corpus			
	N		NN	
	<i>f</i>	%	<i>f</i>	%
AFFECT	74	7.4	56	6.8
JUDGEMENT	132	13.3	160	19.5
APPRECIATION	788	79.3	605	73.7
Total	994	100.0	821	100.0

Overall, N sub-corpus employed higher inscribed ATTITUDE types compared to NN sub-corpus. Comparing all three types of inscribed ATTITUDE, the frequency of AFFECT resources was less than the frequency of JUDGEMENT and APPRECIATION for both N and NN sub-corpora. In addition, N sub-corpus used higher instances of AFFECT than NN sub-corpus. However, JUDGEMENT occurred more frequently in the discussion section of RAs written by NN group than N group. Moreover, the number of APPRECIATION instances used in N sub-corpus was more than that for NN sub-corpus. JUDGEMENT markers express positive or negative evaluations of human behavior. Contrary to what existing literature gives about Asian culture on keeping face (Lustig & Koester, 2010; Hu & Wang, 2014), Table 2 shows that NN sub-corpus, surprisingly, employed more JUDGEMENT resources than N sub-corpus. However, N sub-corpus employed more APPRECIATION markers than NN sub-corpus.

Roughly speaking, affectual representations are not prevalent appraising markers in written academic discourse. It is due to the fact that academic discourse needs to be objective and to deal with a de-personalized interpretation of research endeavors (Gilbert & Mulkay 1984; Bazerman 1988; Johns 1997); while AFFECT is undoubtedly “the most explicit and personal system of voicing feelings” (Xu, 2017, p. 134). Thus, it seems required to investigate AFFECT realizations in N and NN sub-corpora and to appreciate the types of AFFECT that are voiced in a RA.

**Table 3**

*Distribution of AFFECT Types in N and NN Sub-Corpora*

AFFECT	Sub-Corpus			
	N		NN	
	<i>f</i>	%	<i>f</i>	%
Dis/inclination	63	85.1	26	46.4
Un/happiness	3	4.1	3	5.4
In/security	2	2.7	11	19.6
Dis/satisfaction	6	8.1	16	28.6
Total	74	100.0	56	100.0

Analysis of the representation of AFFECT types in the discussion section of N and NN RAs in Table 3 showed that, all AFFECT types (dis/inclination, un/happiness, in/security, and dis/satisfaction) occurred in the collected corpora written by both N and NN groups. However,

the most frequent AFFECT type was dis/inclination. In other words, N sub-corpus utilized more dis/inclination than NN sub-corpus. Comparing both sub-corpora, the least frequently occurred AFFECT type in N sub-corpus was in/security and in NN sub-corpus was un/happiness.

The results of JUDGMENT types analysis are summarized in Table 4. Overall, the frequency of occurrence of JUDGMENT resources in N sub-corpus was less than NN sub-corpus. Social-esteem occurred more in NN sub-corpus compared to N sub-corpus. However, social-sanction was more frequent in N sub-corpus than NN sub-corpus.

**Table 4**

*Distribution of JUDGEMENT Types in N and NN Sub-Corpora*

JUDGEMENT	Sub-Corpus			
	N		NN	
	<i>f</i>	%	<i>f</i>	%
Social-esteem	64	48.5	110	68.8
Normality	2	3.1	0	0
Capacity	58	90.6	104	94.5
Tenacity	4	6.3	6	5.5
Social-sanction	68	51.5	50	31.3
Veracity	1	1.5	0	0
Propriety	67	98.5	50	100.0

The analysis of the evaluative resources used in N and NN RAs for expressing the attitudinal social-esteem revealed that there were differences in the number of occurrences for the three sub-types of social-esteem, namely, normality, capacity, and tenacity. The least frequent sub-type for N and NN sub-corpora was normality. Nevertheless, the same pattern of social-esteem sub-type use could be identified in both sub-corpora, that was, the predominance of capacity. In addition, the differences between N and NN sub-corpora in terms of tenacity was marginal. The total number of social-sanction representations in N sub-corpus was higher than NN sub-corpus. However, most of social-sanction was propriety and veracity had a very small fraction of social-sanction in both sub-corpora.

Table 5 presents the results of APPRECIATION values analysis used in the discussion section of RAs written by N and NN scholars and it shows almost a similar pattern in the use of APPRECIATION resources in both groups. In fact, this pattern was the same for both N and NN groups that featured a dominance of social-valuation among sub-types of APPRECIATION and also as a predominant explicitly inscribed ATTITUDE marker across both sub-corpora. This means that, the most common way of negotiating feelings and emotions in academic discourse is evaluation of the value of products, performance, and phenomena.

**Table 5**

*Distribution of APPRECIATION Types in N and NN Sub-Corpora*

APPRECIATION	Sub-Corpus			
	N		NN	
	<i>f</i>	%	<i>f</i>	%
Reaction	43	5.5	57	9.4
Composition	31	3.9	33	5.5

Social-valuation	714	90.6	515	85.1
Total	788	100.0	605	100.0

Overall, N sub-corpus used higher APPRECIATION resources than NN sub-corpus. Not like the social-valuation, the frequency of occurrences for reaction in N sub-corpus was less than its NN counterpart. Unlike social-valuation which is the most neutral sub-type of APPRECIATION and inscribed ATTITUDE dealing with evaluation of how things are innovative, reliable, and appropriate; reaction is the most personal sub-type of APPRECIATION and inscribed ATTITUDE, which is concerned with reactions to things as if whether things or phenomena catch writer's attention or not. It can be said that, N sub-corpus writers' language is more objective than their NN counterparts which prefer to use more subjective language in their RAs' discussion section. The difference in terms of composition (which is concerned with balance and complexity of things) between the two groups, however, was marginal.

As shown in Table 6, a total of 58 evoked ATTITUDE occurred in both N and NN sub-corpora, which is a very small fraction of total ATTITUDE types contrasted to inscribed ATTITUDE. Attitudinal values were evoked by N writers less than their NN counterparts. Table 6 presents the distribution of implicitly evoked attitudinal instances in the collected corpora of N and NN RAs.

**Table 6**

*Distribution of Evoked ATTITUDE in N and NN Sub-Corpora*

	Sub-Corpus			
	N		NN	
	<i>f</i>	%	<i>f</i>	%
Evoked ATTITUDE	19	1.9	39	4.5

In both N and NN sub-corpora of this study, these evoked ATTITUDE resources were typically idioms. Inscribed ATTITUDE lexis are those attitudinal resources that explicitly occur in the discourse. Metaphors play different functions in discourse. They can perform an intensifier role for emotions. Therefore, applying idiomatic metaphors would play a significant part in written academic discourse. NN sub-corpus RAs employed more idioms than N sub-corpus RAs. One way to justify this commonality of practice between NN authors is that, they may see applying idioms as a way to add more expressive power to their written academic language and to make it more aesthetic. However, considering the fact that written discourse community needs a formal, concise, and to the point language and also having in mind that in academic world it is a necessity to consider readers, a native reader as a part of Western culture community might feel using idiomatic metaphor in written academic discourse is a point of distraction leading to pragmatic aim failure. Table 7 displays the most recurring and also the shared idiomatic metaphors which were used in both N and NN sub-corpora.

**Table 7**

*Most Recurring Evoked ATTITUDE in N and NN Sub-Corpora*

Evoked ATTITUDE	Sub-Corpus	
	N	NN
	a horizon of	a horizon of
		broadening the horizon
		ingredient(s)

		long and daunting road
	one-way street	one-way street
	shedding light	shedding light on
	on	

Finally, in order to investigate the difference between attitudinal resources in N and NN RAs, statistical measure using Mann-Whitney U test was conducted. As Table 8 depicts, statistically significant differences were found between N and NN sub-corpora in terms of attitudinal types (inscribed and evoked): inscribed ATTITUDE (AFFECT, JUDGEMENT, and APPRECIATION), AFFECT (dis/inclination, un/happiness, in/security, and dis/satisfaction), JUDGMENT (social-esteem and social-sanction), and APPRECIATION (reaction, composition, and social-valuation) ( $p \leq .05$ ).

**Table 8**

*Results of Mann-Whitney U Test Analysis of ATTITUDE Findings*

			Mann-Whitney U test		
			U	z	Asymp. Sig. (2-tailed)
ATTITUDE	Attitudinal types: inscribed, evoked		424006.50	-3.31	.001*
	Attitudinal polarity: positive, negative		418185	-1.94	.052
	Inscribed: AFFECT, JUDGEMENT, APPRECIATION		387472	-2.51	.012*
AFFECT	AFFECT: dis/inclination, un/happiness, dis/satisfaction		1258.50	-4.66	.000*
JUDGEMENT	JUDGEMENT: social-esteem, social-sanction		8420	-3.50	.000*
	Social-esteem: normality, capacity, tenacity		3444	-.54	.589
	Social-sanction: veracity, propriety		1675	-.85	.391
APPRECIATION	APPRECIATION: Reaction, composition, social-valuation		225121	-3.18	.001*

\* The mean difference is significant at the .05 level.

### Discussion

The present study aimed to logogenetically investigate the use of APPRAISAL systems in the discussion sections of RAs produced by N and NN academia of English. Breaking down ATTITUDE types and comparing the distribution of explicitly inscribed and implicitly evoked attitudinal instances in the collected corpora of N and NN RAs indicated that instances of inscribed ATTITUDE were higher than evoked ATTITUDE for both N and NN groups. However, N sub-corpus used higher instances of inscribed ATTITUDE for indicating their attitudinal meanings

than NN sub-corpus. Comparing all three types of inscribed ATTITUDE, the frequency of AFFECT resources was less than the frequency of JUDGEMENT and APPRECIATION for both N and NN sub-corpora. In addition, N sub-corpus used higher instances of AFFECT than NN sub-corpus. However, NN group used more JUDGEMENT than N group. Moreover, N sub-corpus employed more APPRECIATION markers than NN sub-corpus.

The analyses of the international texts by Jalilifar, Hayati, Mashhadi (2012) also revealed that compared to the published Iranian texts, the resources of APPRECIATION used in the published international papers were interestingly much greater. There was a strong preference for coding ATTITUDE as APPRECIATION by all the 40 writers, with fewer instances of either AFFECT or JUDGEMENT. APPRECIATION “institutionalizes feelings as propositions (about things), that is, expressions of APPRECIATION shift feelings or emotions from a personal to an institutional framework” (Martin, 2000, p. 147). In encoding ATTITUDE as APPRECIATION, writers choose not to evaluate an emotional response or to make judgments of people’s behavior or character. In this sense, the APPRAISAL avoids a personal orientation in favor of an institutional one.

ATTITUDE markers were more frequent in N sub-corpus compared to NN sub-corpus. This is something which is in agreement with the study of Jalilifar et al. (2012), which indicated that the international writers adopted a more explicit approach in their argumentation by using more resources of ATTITUDE than did the Iranian writers. Linguistically, this may relate to the international writers’ more sophisticated linguistic repertoire that enables them to express themselves and to construct an argument in their articles. This finding might accord with the claim of previous studies that Asian writers’ evaluative language is characterized as being implicit (Azar & Hashim, 2019). This matter might be attributed to the cultural tendencies of the Iranian writers towards communication-reticence, context-dependence, reader responsibility, and the value they place on consensus rather than argumentation (Jalilifar et al., 2012). Within the culture of the Iranian writers, it seems like, there is no need to highlight and explicitly argue for the arguable. Such cultural characteristics restrain the Iranian writers from expressing themselves explicitly, automatically reducing the amount of argumentation.

The results are also similar to Hood’s (2004) and Geng and Wharton’s (2016) findings, which concluded that writers of published articles use more resources of APPRECIATION than AFFECT or JUDGEMENT. They maintained that the published texts by international writers were characterized by the use of explicit ATTITUDE. The international writers favored institutionalized expressions of ATTITUDE as APPRECIATION of phenomena, but shun expressions of AFFECT and also ethical judgements of people. The results are also in agreement with the prior research by Xu (2017) and Jalilifar and Hemmati (2013), in which it was expected that NN writers keep face in their communication and use less JUDGEMENT and more APPRECIATION than British authors. However, NN authors unexpectedly used more JUDGEMENT than their N counterparts with a highly significant difference, while the N English speaking writers used more APPRECIATION than the native writers.

The analyses of the present study are also in line with the studies by Liu and Thompson (2009), Liu (2013), Lv (2015), Ngongo (2017), and Jalilifar and Hemmati (2013), which revealed that in terms of the ATTITUDE subsystems, APPRECIATION was more frequently used by NN writers. It indicates that the NN writers also appreciate and evaluate things or phenomena as their certain topics in the research articles.

### Conclusion and Implications

Relying on the move structure (Kanoksilapatham, 2005) and the modified version of Martin and White’s (2005) APPRAISAL theory by Xu (2017), the use of ATTITUDE resources was

logogenetically investigated in the discussion section of Applied Linguistics' RAs produced by N and NN academia of English. It was observed that instances of inscribed ATTITUDE were higher than evoked ATTITUDE for both N and NN groups. However, N sub-corpus used higher instances of inscribed ATTITUDE for indicating their attitudinal meanings than NN sub-corpus. Among all three types of inscribed ATTITUDE, the frequency of AFFECT resources was less than the frequency of JUDGEMENT and APPRECIATION for both N and NN sub-corpora. In addition, N sub-corpus used higher instances of AFFECT than NN sub-corpus.

However, NN group used more JUDGEMENT than N group. Moreover, N sub-corpus employed more APPRECIATION markers than NN sub-corpus. As regards JUDGEMENT types analysis, the frequency of JUDGEMENT resources in N sub-corpus was less than NN sub-corpus. Social-esteem occurred more in NN sub-corpus compared to N sub-corpus. However, social-sanction was more frequent in N sub-corpus than NN sub-corpus.

Regarding APPRECIATION resources, N sub-corpus used more APPRECIATION markers than NN sub-corpus. There was a similar pattern in the use of APPRECIATION resources in both N and NN groups that featured a dominance of social-valuation among sub-types of APPRECIATION, and also as a predominant explicitly inscribed ATTITUDE marker across both sub-corpora. This means that the most common way of negotiating feelings and emotions in academic discourse is evaluation of the value of products, performance, and phenomena. There was also a significance difference between N and NN RAs authored regarding the use of ATTITUDE resources.

The current study implies a number of helpful hints to research writers, teachers, material developers. Any academic writing has its own intricacies, and applying different types of APPRAISAL resources to construct an argument requires commitment on the part of the writer. Thus, in addressing a discourse community, writers need to be more cautious of their claims and statements that they make. The implications of this study highlight the need to enable the Iranian writers to understand the importance of APPRAISAL resources and to practice the expression of APPRAISAL. Thus, mastery of the APPRAISAL system is fundamental to being fully literate in a foreign language. Besides, the findings of this study indicate that teachers need to be aware of potential differences between students from different countries in their use of APPRAISAL resources. It is useful for teachers to know the types of differences that might exist and to plan to understand which APPRAISAL resources their students can already use successfully. Another pedagogic concern to develop effective EAP teaching materials to assist Iranian academics in Applied Linguistics field is to manage the stance and voice demands inherent in discussing their research articles. Textbooks can specifically emphasize the types of stance resource found in this study that were overlooked by the Iranian authors. Moreover, different types of activities can be designed based on conclusions from the current study.

The present study suffers from some limitations. First of all, this study analyzed only a small number of writing samples. Since the study just selected 60 RAs from Iranian and native English speaking authors, it is far from a representative research whether it be on the variation of genre or the overall length of the texts. Another limitation is that the present study explores the RAs of N and NN authors, and all texts analyzed were from the Applied Linguistics field. Thus, it is not comprehensive enough since it does not cover the discussion sections in other fields. Last but not least, the scope of the present study was limited to ATTITUDE resources while ENGAGEMENT and GRADUATION resources can be further studied.

The results of the present study confirmed that an academic argument is no longer objective, decontextualized, autonomous, and value-free. It is very contextualized, situated, intertextual, and dialogic. It is also very expressive, ideological, and value-laden. Put it

differently, good academic writing establishes a clear interaction with an audience. Writing is negotiation and dialogic relations with the reader.

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