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Evidentials in Research Articles: A Marker of Discipline

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ABSTRACT

By taking a mixed-methods research design and in a comparative corpus, the present study explored evidentials use in empirical articles in four disciplines: Applied Linguistics, Psychology, Environmental Engineering, and Chemistry. The study aimed to investigate the extent to which writers belonging to different communities vary in their strategic use of evidence markers in written academic discourse. To this end, a representative sample of 80 research articles written in the selected disciplines comprised the corpus of the study. The functional-contextual analysis reported significant cross-disciplinary variations in the writers' rhetorical behavior of using evidentials in their writings. Notable variations were found in the discursive functions of evidentials used in the sampled research articles. The variations could be attributed to the amount of rhetorical sensitivity to and awareness of purpose, disciplinary propensities, and the tendencies of the disciplinary genre. The present findings can be helpful in the teaching and learning of academic writing and may give some insights to rhetorical practices of members in the disciplinary communities studied.

Keywords: Academic writing, disciplines, evidentials, metadiscourse, research articles

INTRODUCTION

This cross-disciplinary linguistic study aims to analyze English research articles (RAs) within the disciplines of Applied Linguistics (AL), Psychology (Psy), Environmental Engineering (EE), and Chemistry (Che) focusing on rhetorical and discursive variations in the use of evidence markers. In theory, evidentials fall within interactive metadiscourse resources that showcase the external source of information in the existing writing and offer reliability and integrity to that information by calling attention to the trustworthiness of its origin (Hyland, 2005; Hyland & Tse, 2004; Thomas & Hawes, 1994). In other words, they account for references to authorities that writers resort to for their intellectual and persuasive force. In RAs, such attributions fairly operate to

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admit and admire specific scholars, through authority resulted from publishing follow-up work in a recognized outlet. Hyland (2005) puts forward that the inclusion of references carried two strong points: first, it reflected an apt disciplinary orientation; and second, it reminded readers that current arguments were invariably a reply to preceding arguments and were themselves accessible for more arguments by others. Thus, the embedding of statements in networks of references allows mitigation and dialogue without which communication flow will be hampered. To perform this metadiscourse function, evidentials, such as *X states that…*, *according to…* can be identified (Hyland, 2005).

A literature search shows that the study of metadiscourse, including evidentials, in academic writing has been a central line of investigation across disciplinary communities. Highlighting the varied rhetorical norms, values, and assumptions favored by different disciplines may help equip novice academic writers with much more appropriate discipline-specific rhetorical options so as to meet expectations of the research community (Basturkmen, 2009; Hyland, 2004; Li & Wharton, 2012; Lim, 2011, 2012, 2017). While arguably the most prominent studies (Abdi, 2002; Cao & Hu, 2014; Dahl, 2004; Harwood, 2005a, 2005b; Hyland, 2004, 2005, 2007; Khedri, 2016; Khedri, Heng, & Ebrahimi, 2013a; Khedri, Heng, & Hoon,, 2015b; Loi & Lim, 2013; Salas, 2015) examined writings in various fields of knowledge, a number of disciplines, namely Psy, EE, and Che, were inadequately considered in the past studies. The current research, then, could be perceived as a substantial step toward improving features of language pedagogy such as the teaching and learning academic writings, namely research articles. Cross-disciplinary studies like the present one appears to be central in investigating disciplinary variations in writers' rhetorical and linguistic behavior and the ways in which they guide the readers along the discourse so that both the discourse and the authorial standpoint could be well interpreted. Such studies also enable us to determine cross-disciplinary discursive and rhetorical variations in a given academic genre and to gain a reflective understanding of the rhetorical beliefs within the disciplines in question. Overall, the following two research questions form the concern of this study.

1. To what extent do the AL, Psy, EE and Che writers map evidentials onto their RAs?
2. What are the discursive functions of evidentials used in the text?

METHODS

Disciplines

This study examined the use of evidentials in the RA genre within four disciplines. The disciplines were chosen from the hard and soft sciences (Becher, 1989). AL was selected mainly for the reason that the RAs in the field are situated in the context of language studies that are of primary interest to the community in which

the researcher is a member. In addition, a program of AL has implications for English as a Foreign/Second Language (EFL/ESL) teachers who teach writing. Necessarily, such writing, especially at tertiary level, would embrace technical writing of this nature in the curriculum. The selection of the other disciplines, as discussed earlier, was due to the lack of research into their rhetorical conventions. This paucity is more acute when it comes to the writers' textual enactment of evidentials in Psy, EE, and Che research papers. Therefore, this study could contribute substantially to the existing knowledge of metadicourse usage, especially evidence markers, in writing academic RAs. However, the observations here have been limited to the present dataset and no attempt was made to allow generalizations about the use and nature of evidentials in academic writing within all the soft and hard science disciplines.

Journal Selection

The AL journals included the *Journal of English for Academic Purposes, Journal of Pragmatics* and *English for Specific Purposes*. The Psy journals consisted of the *Journal of Behavior Therapy and Experimental Psychiatry, Behavior Research and Therapy* and *Journal of Experimental Child Psychology*. The EE articles were culled from the *Journal of Hazardous Materials*, *Water Research* and *Building and Environment*. The Che articles were selected from the *Journal of Molecular Structure*, *European Polymer Journal* and *Microchemical Journal*. The journals were selected following the Nwogu's (1997) criteria of representativity, reputation, and accessibility. To meet the first two criteria, the selected journals were all recognized in the disciplines in question. They are ISI indexed with an impact factor (IF), as reported by *Journal Citation Report* (2004). The articles published in the journals were represented equitably for the RA genre in content and style, that is, as quoted by Bazerman (1994), the text was "situationally effective" and derived from "expert performance". As for the third criterion, all the journals were retrievable online. As the researcher was not a member of the disciplines other than AL, he consulted with two insider-informants in each discipline of Psy, EE, and Che. They were asked to nominate top 10 journals published in their disciplines. In case there was an incompatible nomination, more informants were asked for nominations until three journals were commonly ranked and thus formed the resource for final selection.

Article Selection

A two-round sampling to select RAs for data analysis was run. From the first round, 228 articles (57 per discipline), which were published in the period 2008–2017 and formatted according to the Introduction, Method, Results and Discussion (IMRD) structure—a widely accepted conventional format for empirical research papers proposed by Swales (1990), were extracted from the source journals. In the second round, 20 RAs within each discipline were randomly selected from the first

round chosen articles. Altogether, 80 RAs compiled the whole corpus. They made up about 360,000 running words (see Table 1). The articles represented a variety of authors to reflect cross-sectional style preference. They were all empirical articles and fell under the category of "original research articles." It should be mentioned that the selected RAs were "cleaned" to exclude additional scripts (i.e., *footnotes*, *superscripted numbers*, *page numbers*, etc.) so that analysis is streamlined and focused on the body of the text. An overall description of the corpus is provided in Table 1.

Table 1
Corpus description

	AL	Psy	EE	Che
No. of RAs	20	20	20	20
No. of journals	3	3	3	3
Range of text length	4144–6221	4282–5861	3676–4902	3174–4229
Average text length	5098	4941	4188	3764
Disciplinary corpus size	101,961	98,839	83,762	75,297
Total corpus size		359,859		

Data Analysis

After obtaining the final corpus, the dataset was searched to identify linguistic features functioning as evidentials. To this end, first an automatic search, examining the tokens of evidentials in Hyland's (2005) list, was run on the data using WordSmith Tools (Scott, 2004). This widely used concordancer helped identify linguistic features in electronically saved manuscripts. The corpus was then annotated word by word so as to identify evidence markers, which were hardly anticipated by automatic search. All the markers that were linguistically realized were contextually studied to ensure that they were used as metadiscourse with the consideration that metadiscourse, including evidentials, is multifunctional and context-dependent (Ädel, 2006). Therefore, a functional analysis was seen to be warranted to find out the functional meaning of the identified features to enable further investigation. The identified evidentials were then quantified according to the corpus. Since the size of each disciplinary corpus varied, the frequency count was normalized accordingly by using Biber, Conrad, and Reppen's (1998) approach [(Raw frequency count / number of words in the text) Â 1000 = normalized frequency count].

Once the evidence markers were identified and quantified, the texts were further subject to contextual analysis to collect information about the discourse functions of the markers according to actual incidences in the sampled texts. The analysis was continued by manually computing the

incidence of functions. The frequencies of each discursive function per RA in the four datasets were recorded to decide whether a certain function appeared recurrently enough to be perceived as function. In this vein, a cut-off frequency of 5% of total incidence of that particular function within each discipline was set as a possible degree of function stability.

To lower the risk of arbitrariness and to demarcate the accuracy of the analytical procedure, 12 articles (about 15% of the corpus data) were independently analyzed by a PhD graduate in applied linguistics who had done her thesis on metadiscourse in academic writing. The inter-rater agreement was measured by Cohen's kappa and the obtained value indicated a high reliability index of .93. It should be mentioned that any conflicts between both analyses were resolved through meetings and discussion.

RESULTS AND DISCUSSION

In this section, the results of the normalized frequencies of evidentials in each disciplinary corpus are first presented. It is then followed by an interpretation and discussion of the results related to the functional analysis of evidentials in order to uncover how writers in the different disciplines embedded their arguments in networks of references.

Frequency Analysis

An average of about 50 citations within each article suggests how important locating academic claims within a wider disciplinary framework is. Of course, relying on the work of others in follow-up studies substantially indicate the reliance of a text on context and hence plays a key part in collaboratively constructing new knowledge between readers and writers. According to Hyland (2005), innovative researches are required to be entrenched by community-generated literature to establish their importance, relevance and authorial credentials (Berkenkotter, Huckin, & Ackerman, 1988; Hyland, 2000). This, however, was much more evident in the humanities, with almost two-thirds of total citations in the Psy and AL data. Table 2 shows the spread of evidence markers in the four datasets, indicating more citations in the soft disciplinary rhetoric, with well below the average in the EE texts. As can be seen, writers in the soft disciplines were more inclined toward embedding their own contributions in the discourse, which emphasized the contribution of community-based information resources (12.76 and 11.59 times per 1000 words in the corpus of Psy and AL, respectively). They likely wanted to highlight evidences that attest to their own credentials, thus situating their work, its value and significance. Such proclivity could be justified given the nature of the two fields that are categorized as soft sciences. Following Becher (1989) and Hyland (2004, 2005), evidentials are largely more considerable in use in the discourse of soft fields due to the fact that soft notions are less anchored on hard evidence and fewer are contingent on a single line of discourse construction or argument. Thus, the foremost motive behind the use of evidence markers in soft

texts apparently deals with the shunning of making too strong a claim so as not to appear presumptuous or overbearing. This manner of mitigation is probably associated with the lack of certainty and greater subjectivity in argumentation, resulting in the selection of writing stance that uses a more oblique voice. Soft science writers, different from their peers in hard sciences, are often less able to cite their work based on objective standards to help them carry their ideas. In fact, it is almost impossible to presume that readers of such research reports will have identical interpretive knowledge, and with this in mind, soft science authors need to provide more descriptive context such as the use of citations to substantiate their arguments. It could be said that widespread use of citations in soft texts is a major approach taken to show their knowledge and credibility in the disciplinary field, especially with the aim of indicating that the claims made in the writing has considered the least reputable development. Therefore, the greater inclusion of other works in new work within the fields of AL and Psy might indicate the writers' more alertness in sturdily locating the ongoing work in disciplinary body of literature, affording a discursive structure for assertions and showing a reasonable source for ideas.

In contrast, the lesser incidences of evidentials in EE and especially Che rhetoric may reflect more cumulative and generally shared knowledge among members of the hard science disciplines. Hard science scholars typically contribute to fairly distinct lines of inquiry and proceed their work along socially approved experimental procedures, hence, they seem more able to embody a remarkable amount of background, procedural and theoretical knowledge and technical terminologies (Hyland, 2000). That is, work in scientific matters are tersely reported with an assumed shared jargon focusing on the results of their studies. The conviction is usually in the way procedural steps are detailed to enable authentication. Such shared presuppositions are built up based on the use of an extremely social-based regulated code (Bazerman, 1988; Hyland, 2000) that is well known in their professional practices, tantamount to an author being purely "a messenger relaying the truth from nature" (Gilbert, 1976; Hyland, 2005). With such an expectation,

Table 2
Evidentials: Raw and normalized frequencies per discipline (Raw frequency/corpus size) Â 1000

	Per 1000 words		Average per paper
	Raw	Norm.	
Applied Linguistics	1182	11.59	59.1
Psychology	1262	12.76	63.1
Environmental Engineering	811	9.68	40.55
Chemistry	541	7.18	27.05
Totals	3796	10.54	47.45

the "truthfulness" of the work rests very much on the data and too much use of evidentials, such as in the form of citations, could be deemed superfluous.

More variations were found across the disciplines relating to how writers represent the work of others in their statements. The soft discipline writers were far more likely to put emphasis on the weight they afforded idea originators. As shown in Table 3, the applied linguists and psychologists favored more the use of integral citations, with citing authors within the discourse than in footnotes or parentheses (examples 1a–1d). In the hard-science disciplines, only EE followed this form but mostly as a shorthand reference to methodological measures rather than for presenting the work of others (examples 1e–1f).

(1a) *Lin and Evans (2012)*, for example, have considered applied mathematics in a cross-disciplinary study of the overall macro-organization of RA structure. [AL]

(1b) This is similar to the mixed-method approach adopted by *Simpson-Vlach and Ellis (2010)*, who also combined statistical information and human judgement from EAP instructors when compiling the Academic Formulas List.

(1c) *Saarni's (1984)* original study indicated that regulation of affect developed across childhood, with 6-year-olds displaying overt negative emotions in response to … [Psy]

(1d) A similar conclusion was reached in a study by *De Jong and Muris (2002)* who found evidence to suggest that the possibility … [Psy]

(1e) The bacterial ACC deaminase activity was evaluated based on the method of *Honma and Shimomura* [21]. [EE]

(1f) The octahedral Zr(IV) complexes with tetradentate [ONNO]-type ligands were synthesized according to the procedure described by *Busico et al*. [9]. [Che]

Within integral citation, cited authors are basically given more weight by fronting them in the reporting sentence. The soft- and hard-knowledge writers also differed in this regard, with the latter choosing adjunct agent forms (i.e., *according to* ...) and other impersonal linguistic expressions, such as

Table 3
Surface forms of citations

	Integral		Non-integral		Subject		Non-subject	
	Raw	%	Raw	%	Raw	%	Raw	%
Applied Linguistics	456	**38.6**	726	**61.4**	648	**54.8**	534	**45.2**
Psychology	399	**31.7**	863	**68.3**	754	**59.7**	508	**40.2**
Env. Engineering	112	**13.8**	699	**86.2**	184	**22.7**	627	**77.3**
Chemistry	39	**7.2**	502	**92.8**	139	**25.7**	402	74.3

several studies. The following are examples of actual use sampled from the corpus data.

(2a) *According to Mountassif et al.* [2], no changes were observed for glycemia in rats exposed to 3 mg/kg BW/day of 2,4-D. [EE]

(2b) *Several studies* have reported the enhanced accumulation of proline in various plant species when plants are subjected to DS or MS [53, 54]. [EE]

(2c) *According to Keii et al.* [16] the asymptotic plot of molar mass vs. polymerization time (Fig. 1b) can be linearized using Natta's equation for ... [Che]

(2d) Lately, *extensive studies* on nanocomposites of HNTs with various polymers such as epoxy [5], polypropylene [6], polyamide 12 [7], and nitrile rubber [8] have underscored the use of these nanocomposites for structural and thermal applications. [Che]

The conventions of objectivity in hard-knowledge fields (Hyland, 2005) might be a possible explanation for the rather less occurrence of evidentials in the corpus of EE and Che and for the prevalence of non-integral forms of citation. As with other hard-science disciplines, writers in EE and Che often laid less stress on agents, thus reinforcing the philosophy that the authenticity of arguments lies in community-based invariable norms and standards independent of pillars of induction, falsification and replication.

Functional Analysis

Table 4 shows the results of functional analysis of evidentials used in each set of data. As can be seen, the writers used such interactive metadiscoursal features for a wide range of discursive functions. Some functions were found to be shared across the

Table 4
Rhetorical functions of evidentials: Raw frequencies and percentages per discipline

	AL		Psy		EE		Che	
	Raw	%	Raw	%	Raw	%	Raw	%
1st function	486	**41.1**	536	**42.4**	273	**33.6**	171	**31.7**
2nd function	76	**6.4**	70	**5.6**	*	*	*	*
3rd function	62	**5.3**	*	*	*	*	*	*
4th function	269	**22.8**	298	**23.7**	151	**18.6**	79	**14.6**
5th function	289	**24.4**	358	***28.3***	387	**47.8**	291	**53.7**
Total	1182		1262		811		541	

** 1st function: Signaling a reasonable and convincing foundation for on-going work*
** 2nd function: Announcing a gap in the literature*
** 3rd function: Providing a framework*
** 4th function: Explicating and rationalizing applied experimental procedures*
** 5th function: Justifying new findings*

datasets, whereas some others represented discipline specificity. What follows presents a detailed description of each rhetorical function with examples sampled from the corpus data.

As shown in Table 4, the first three functions occurred in the RA introductions but not in the four sets of papers. While the AL writers made use of all the aforementioned three strategies, their peers in EE and Che made exclusive use of evidentials just to lay groundwork for their works. Laying the groundwork also dominated evidentials use in the AL and Psy texts. This focus was common as a result of the main rhetorical purpose of the introduction section, where writers increasingly would want to establish their research territory. In relation to the function, writers would be employing various strategies among which is the claiming of centrality that is considered as "appeals to the discourse community… to accept that the research to be reported is part of a lively, significant or well-established research area" (Swales, 1990). Assuring the centrality of claims, as also found by del Saz-Rubio (2011), is feasible via citations, which were much more prevailing in the soft disciplinary rhetoric. With reference to the other two functions, both were found in the soft disciplinary texts with no evidence of their use in the EE and Che writings. It should be mentioned that it was only the AL writers who mapped evidentials onto discourse with the purpose of providing a framework on which they based their studies. The following are examples of actual use.

First Function: Signaling a Reasonable and Convincing Foundation for On-going Work.

(3a) If "the genres are living and the RA is continually evolving" as suggested by Swales (1990), medical genres will also undergo some changes. [AL]

(3b) As it has been noted (*Rozin, Haidt, McCauley, Dunlop, & Ashmore, 1999*), it might be useful to include a behavioral index of disgust sensitivity in this type of research [Psy].

(3c) A more *recent study* has demonstrated the technical feasibility of a one-stage nitritationeanammox process to treat digested black water in … (Vlaeminck et al., 2009) [EE]

(3d) *Previous researches* have also demonstrated that citrus limonoids are capable of inducing cytotoxicity in both cultured human cancer cell and … [23,24,25]. [Che]

Second Function: Announcing a Gap in the Literature.

(4a) Swales (1990) claimed that titles were an issue in academic genres which had not yet been fully studied. *Gesuato (2005, 2008)* claimed that research on journal article titles had not yet answered the question of… [AL]

(4b) In spite of a great deal of empirical work, the findings in the thought suppression literature still remain

mixed (*Abramowitz, Tolin, & Street, 2001*). However, the role of credibility with regard to both guided and unguided self-help is unclear (*Ritterband et al., 2010*). [Psy]

Third Function: Providing a Framework.

(5a) In this article, we take *Hyland's* interpersonal model of metadiscourse as a point of departure. According to Hyland and Tse (2004) and Hyland (2005)... [AL]

(5b) Seven agrammatic speakers (4 females, mean age: 43 years old) participated in the current study. All of them were diagnosed with Broca's aphasia, based on the *Turkish Aphasia Assessment Test (ADD: Maviş and Togram, 2009)*. [AL]

(5c) A total of 38 reading comprehension passages, 37 listening comprehension passages, and 12 cloze passages from 12 different versions of CanTEST were analyzed in the study along with … CanTEST is a standardized English proficiency test developed for student admission purposes, and has been shown to be a valid and reliable measure of academic English ability (*Des Brisay, 1994; Laurier & Des Brisay, 1991*). [AL]

The results of the functional analysis revealed that RA writers made use of evidence markers for further discursive purposes such as *explicating and rationalizing applied experimental procedures* and *justifying new findings*. The former recurrently appeared in the RA method sections, where the writers make an attempt to obviate probable challenges to their applied methodological procedures and fortify the reliability and integrity of their research outcomes and allied interpretations. It is truly agreed that the aptness of a research design is more likely to be derived from previously established experimental methodologies. This finding is understandable in that writers may justify the aptness of their experimental research procedure "by using integral or non-integral citations of past researchers' statements" (Lim, 2011). Readers also have been known to be discerning about the procedures applied in research as they indicate the robustness of the work and are also sensitive to cited works in support (Bazerman, 1988). This strategy minimizes possible criticism on the part of the readers. Again, as can be seen in Table 4, the soft science writers dominated this use of evidence markers (22.8% in AL and 23.7% in Psy). Text examples are:

Fourth Function: Explicating and Rationalizing Applied Experimental Procedures.

(6a) … I analyzed the characteristics of the evaluative language in referee reports based on *Suarez's (2006)* definition of… [AL]

(6b) Disrupted or insufficient sleep in childhood is associated with daytime sleepiness (*Fallone, Owens, & Deane, 2002*). As such, the 8-item PDSS (*Drake et al., 2003*) was employed as a self-report measure of daytime sleepiness. Participants were selected from four previously published studies on self-help for SAD (*Carlbring et al., 2007; Furmark et al., 2009*, …). [Psy]

(6c) In this study, a scale for measurement of landscape attributing to the rocky habitats was developed by using some references such as *Arriaza et al.* [32]*, Ergin et al.* [33] *and Acar et al.* [34]. [EE]

(6d) The binding constant Ka was determined with the use of the Scatchard equation adjusted by *Hiratsuka* [29]. [Che]

The latter, *justifying new findings*, in contrast, was evident in the results and discussion sections of the RAs analyzed. This referred to the rationalization of new findings. The writers in the four communities brought in intertextual support for the purpose of supporting and providing an explanation for their newly-found knowledge and results. They did so by comparing current findings with earlier ones in the literature so as to endorse their own professional and authorial credentials. As can be seen, this use abundantly occurred (almost two times more) in the EE and Che research papers conceived as the leading function among others communicated by the hard science writers. Some actual uses are provided below.

Fifth Function: Justifying New Findings.

(7a) *Lim (2010)* similarly found a much higher frequency of steps of explaining findings steps in commentary moves in.… [AL]

(7b) The finding that the PTSD trauma memories contained relatively high levels of re-experiencing seems to be in line with theories on PTSD (*Brewin et al., 1996; Ehlers & Clark, 2000*) as well as theories on memory in general (*Conway & Pleydell-Pearce, 2000*). [Psy]

(7c) The maximum hydrolysis rate obtained in this study is slightly higher than the rates reported in literature (0.30 Cmol Cmol_1 h_1 in *San Pedro et al., 1994* and 3gCODgCOD_1 d_1 in *Gujer et al., 1999*). [EE]

(7d) The results of the present study can be compared with those of *Ketola et al.* [30] who attempted to conduct simultaneous detection of… A similar effect was observed *previously* for protein destabilised by urea [35]. [Che]

CONCLUSION

An overall cross-disciplinary picture of evidentials use was shown in the current investigation. Well-matched with past studies, the present results further proved evidential variations in the writers' disciplinary rhetorical practice and behavior. As found, evidentials were dense in general in the AL and Psy writings. Such a density could be due to the more argumentative and more abstract nature of the two disciplines where soft notions are more detached from the immediately prior developments and are less reliant on a single line of text development. This is supported by Hyland (2004), who reiterates that the main reason behind the prominence of evidentials in soft disciplines is the avoiding of mitigating strong certainty in claim-making. As a result, they describe a context using a substantial amount of supportive language like citations so as to get communal approval. In terms of functional use, results further suggested cross-disciplinary discrepancies. They showed some discursive uses that were either communal or exclusive of a particular discipline. For example, the AL and Psy writers made use of evidentials for the purpose of *announcing a gap,* which was totally absent in the EE and Che writings. In addition, while the soft science writers had the most use of evidence markers *to provide a convincing framework for the work being reported*, their counterparts in the hard disciplines leaned on evidentials to *justify new findings* by comparing them to past findings.

The study showed that working on linguistic realizations and their rhetorically discursive functions in the genre of RAs among different communities could give us significant clues to cross-disciplinary rhetorical and discursive traditions as well as the conventionalized norms of constructing academic prose within a discipline. The findings of the present study could also be of help to academics, especially novice writers who need to hone their skills to gain acceptance in their communities. In summary, the analysis of the present study reveals (i) variation in the positioning of evidentials in different segments of discourse as indicative of writer's choice and style; (ii) techniques used to convey and support new knowledge and findings efficiently; and (iii) communal recognition by writers of the importance of experts' endorsement in order to gain credibility and become socialized in respective communities through convincing findings published for public dissemination and scrutiny.

As with other few studies, this study is also subject to some limitations that could be addressed in future research. This study analyzed 80 RAs in four disciplines representing both hard and soft sciences. Enlarging the corpus size within the same or different disciplines from both the soft and hard ends of the academic continuum is warranted to seek confirmation on differences or similarities in disciplinary rhetorical sensitivity in terms of linguistic realizations, choices and preferences per science and across science. Future studies are also called on to investigate evidentials

and other interactive and interactional metadiscourse resources in different representative genres of academic writing, such as theoretical and review articles, or in different research paradigms, that is, quantitative and qualitative tracks. It would also be useful to trace the changes through drafts that are written and submitted for review and upon the review, the types of revisions made to evidentials in the drafts. Such case studies will reveal the cognitive processing targeted at specific metadiscourse use. Without doubt, more research efforts of this nature would contribute significantly to the ESP realm of knowledge that can hardly be described as exhaustive in the current times.

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